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FINAL

ENVIROMENTAL STATEMENT

EAST PEARL RIVER, LOUISIANA AND MISSISSIPPI (MAINTENANCE DREDGING)

U.S. ARMY ENGINEER DISTRICT Mobile, Alabama

May 1975

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SUMMARY

EAST PEARL RIVER, LOUISIANA AND MISSISSIPPI (Maintenance Dredging)

() Draft () Revised Draft (X) Final Environmental Statement

Responsible Office: District Engineer, U.S. Army Engineer District P.O. Box 2288

Mobile, Alabama 36628

(205) 690-2511

- Name of Action: (X) Administrative () Legislative
- 2. Description of Action: The proposed action is to maintain the existing navigation channel at the mouth of the East Pearl River, which consists of a channel nine feet deep by 200 feet wide and about 1.3 miles long, connecting the nine-foot contour in Lake Borgne with the East Pearl River. Maintenance dredging is normally required every two and one half years to maintain authorized project dimensions. Dredged material is disposed of in an open-water site adjacent to the channel.
- 3. a. Environmental Impact: This project provides for maintenance of the existing channel to insure its adequacy for use by commercial and private vessels, particularly the servicing of the NASA National Space Technology Laboratories (NSTL). There will be a temporary increase in turbidity near the dredge and disposal areas. Deposition of dredged material will result in temporary disruption of fish habitat and elimination of benthic organisms in the dredge and disposal areas. Air quality will be slightly affected for a short period of time by fuel consumption and resulting engine exhausts of the dredge tenders. There will be short-term adverse effects from noise pollution during the time period when dredging is implemented.
- b. Adverse Environmental Effects: Temporary increase in turbidity near the dredge and disposal areas will have minimal effects on the environment. There will be temporary disruption of fish habitat and elimination of benthic organisms in the dredge and disposal areas. Fuel consumption and resulting engine exhausts of dredge tenders will affect air quality for a short period of time. Noise pollution will hinder recreational activity during the dredging period.
- 4. Alternatives: Disposal of the dredged material by barging from the site; disposal of the material on nearby shoals or islands; disposal of dredged material on shore requiring an extensive dike

system; depositing dredged material on the west side of the channel; staggering the location of disposal sites or leaving an opening in the center of the disposal area to provide for better circulation; discontinuing the project with all commercial and recreational benefits and investments forfeited.

5. a. Comments Received on Previously Coordinated Draft Environmental Statement: Comments on the previously coordinated Draft Environmental Statement were received from the following agencies, citizens' groups, and individuals. These comments were considered in preparation of the Revised Draft Environmental Statement.

Environmental Protection Agency Department of the Interior Department of Commerce Department of Agriculture, Soil Conservation Service Mississippi Clearinghouse for Federal Programs Board of Water Commissioners Air and Water Pollution Control Commission Marine Resources Council Gulf Regional Planning Commission State Highway Department State Board of Health

State of Louisiana--Wild Life and Fisheries Commission
National Wildlife Federation
M.D. Kostmayer, Inc.
Sierra Club, Delta Chapter
Baton Rouge Group
Sierra Club, Delta Chapter
Gulf Coast Group
Mr. Clifford M. Danby, private citizen

b. Comments Received on Revised Draft Environmental Statement

Environmental Protection
Agency, Region VI
Department of the Interior,
Southeast Region
Department of Commerce
Department of Agriculture,
Soil Conservation Service,
MS
Department of Agriculture,
Soil Conservation Service,
LA
Department of Transportation, Federal Aviation
Administration, Southern
Region

Department of Transportation,
U.S. Coast Guard, Headquarters
Department of Housing and Urban
Development, MS
State of Mississippi Clearinghouse for Federal Programs
Marine Resource Council
Pearl River Basin Development
District
Board of Water Commissioners
State of Louisiana, Department of
Public Works
State of Louisiana, Office of
State Planning

-continued-

Department of Transportation, Federal Aviation Administration, Southwest Region Department of Transportation, Federal Highway Administration, MS Department of Transportation, Federal Highway Administration, LA Department of Transportation, U.S. Coast Guard, Eighth District State of Louisiana, Wildlife and Fisheries Commission M.D. Kostmayer, Inc. Sierra Club, Delta Chapter Mr. Michael L. Crago, private citizen

6. Draft Statement to CEQ: 1 May 1973

Revised Draft Statement to CEQ: 21 June 1974.

Final Statement to CEQ: 23 NOV 1976.

FINAL ENVIRONMENTAL STATEMENT

EAST PEARL RIVER, LOUISIANA AND MISSISSIPPI (MAINTENANCE DREDGING)

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FINAL ENVIRONMENTAL STATEMENT

EAST PEARL RIVER, LOUISIANA AND MISSISSIPPI (Maintenance Dredging)

A Draft Environmental Statement for maintenance dredging of the East Pearl River Project was circulated for review and comment on 2 March 1973 to Federal and State agencies and to citizens groups and interested parties in the State of Mississippi. The statement was subsequently filed with the Council on Environmental Quality on 1 May 1973. The project was originally authorized by Congress in 1910 as the "East Pearl River, Mississippi" Navigation Project. Construction of the project was completed in 1911, and since that time, through an error in congressional funding and reporting, the project has been considered as a Mississippi Coast project. During coordination of the draft statement it was recognized that the project channel and majority of the disposal sites were located within the State of Louisiana and that the statement did not adequately reflect the interests of the State of Louisiana. Consequently, the statement was revised to properly reflect the location of the project and was circulated to Federal and State agencies in Louisiana and Mississippi and to interested citizens groups and individuals. The Revised Draft Environmental Statement was filed with CEQ on 21 June 1974.

- 1. Project Description: The proposed action is to maintain the navigation project at the mouth of the East Pearl River which consists of a channel nine feet deep by 200 feet wide and about 1.3 miles long, connecting the nine-foot contour in Lake Borgne with the same contour in East Pearl River.
- 1.01 The project is located in the extreme lower portion of the Pearl River Basin (Figure I). This basin comprises a large part of the Mississippi coastline area, as well as a small part of southeastern Louisiana.
- 1.02 The navigation project was originally authorized by the River and Harbor Act of June 25, 1910, and was completed in 1911. Maintenance of the channels involves removal and disposal of shealed materials necessary to restore the nine-foot channel depth.

 Approximately 337,000 cubic yards of disposal material must be removed about every two and one-half years to maintain project dimensions. The work is accomplished with a hydraulic pipeline dredge and the dredged material is discharged into an approximately 450 acre disposal site paralleling the channel as shown in Figure III, page 18. The dredged material is discharged into the disposal area a distance of 1000 feet from the channel. An effort will be made to leave an opening in the disposal mound as shown in Figure IV in order to minimize alterations to circulation. However, it is not certain

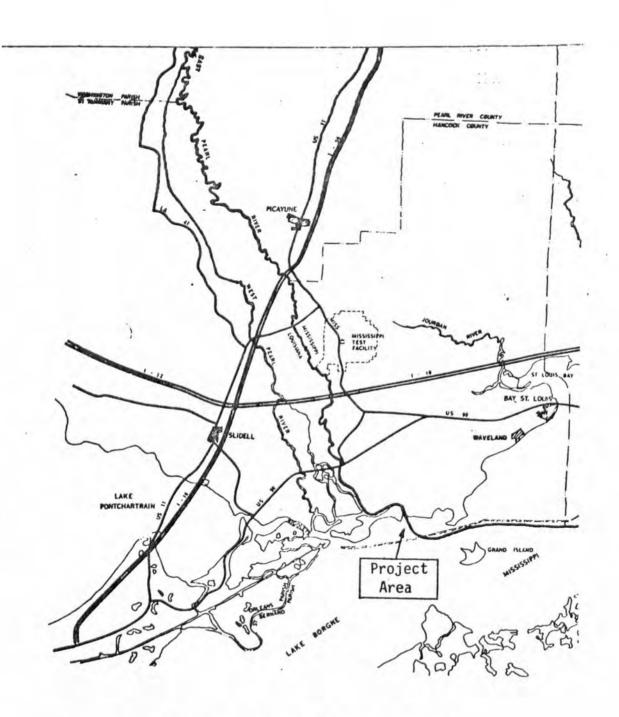


Figure I VICINITY MAP OF EAST PEARL RIVER

whether the opening will remain due to wind and tide induced shifting of the dredged material. This method of disposal was presented in the Draft and the Revised Draft Environmental Statements as alternative D and was recommended for implementation by some of the reviewing agencies in the comments received on the statements. Specific comments in this regard are contained in the Letters of Coordination appended to this final statement.

- 1.03 The benefit to cost ratio for maintenance at the project was calculated to be 2.2:1.0. This calculation was based on an estimated average project benefit of \$28,137, developed from commercial statistics for a five year period through calendar year 1974, and an average annual maintenance cost of \$12,789, based on an eight year average ending fiscal year 1975, during which time dredging was performed three times.
- 1.04 Other federally-authorized navigation projects in the area for which separate environmental statements are being prepared include the Pearl River, Wolf and Jourdan Rivers, Pass Christian Harbor, and the Gulf Intracoastal Waterway.
- 1.05 It is conceivable that the proposed actions for the Pearl and East Pearl Rivers could have a cumulative impact on the environment. However, since the two projects are over seven miles apart at their closest point, this possible impact is not likely to be significant. Because of their proximity, it is possible that the proposed action for East Pearl and maintenance dredging of the Gulf Intracostal Waterway could have a cumulative effect on circulation in the immediate area. The disposal area for the East Pearl action has been redesigned with this possibility in mind.
- 1.06 The channel is totally located within the State of Louisiana at the river outlet at its confluence with Lake Borgne. The majority of the disposal area is also located within Louisiana while the upper portion of the disposal area lies within the State of Mississippi.
- 1.07 The Fast Pearl River is presently used as a means for commercial vessels to service commercial, municipal, industrial, agricultural, and manufacturing land uses, for recreational uses and irrigation. The NASA National Space Technology Laboratories (NSTL) are located on the East Pearl River within the study area. It has a pronounced effect or the economy and growth of the region.
- 2. Environmental Setting of the Project: The general study area includes St. Tammany Parish, Louisiana, and Hancock County, Mississippi, which encompasses the coastal urban area of Waveland and Bay St. Louis (Figure I).

Historical

- 2.01 St. Tammany Parish has had a long and colorful history dating back to 1810 when the inhabitants of the Florida Parishes declared their independence from Spain. The "Free and Independent State of West Florida" existed for just over two months before admission to the United States was granted and the area became a portion of the Louisiana Territory.
- 2.02 The region was divided into four parishes in 1811 and St. Tammany, named for the chief of the Delaware Indians, was established as one of these. Covington, the parish seat, was incorporated by the legislature in 1816. Located in the heart of the Ozone Belt, this city has long been famous for its medicinal springs and healthful air. Due to these two factors, Covington and the surrounding area in St. Tammany Parish have become a popular spot for retired persons.
- 2.03 The other major cities in the parish are Mandeville and Slidell. Mandeville, incorporated in 1840, was one of the outstanding summer resorts in the South and still has much tourist appeal. Slidell, incorporated in 1888, grew mainly through its brick, ship-building, and timber industries. The nearby NASA Test Facility has provided an impetus for strong growth in recent years and the population has increased substantially.
- 2.04 Hancock County was formed in 1812 and included the present counties of Pearl River and Harrison. It is now approximately one-fourth its original size. Bay St. Louis was originally the site of an Indian village and was settled by d'Iberville in 1699. The area has an interesting history of colonization, pirate domicile, resort area, and most recently, a leap into the space age with the location of the NASA NSTL.

Climatology

- 2.05 The study area is subtropical with mild winters and temperate summers. The mean annual temperature is approximately 68 degrees. Average annual rainfall is between 60 and 64 inches, with the heaviest precipitation occurring in July.
- 2.06 Under normal seasonal conditions, tides can be expected to vary on East Pearl River from a mean of 1.6 feet to an extreme of 3.3 feet. Hurricane tide elevations in the study area have varied widely, with a 1969 high of 21.7 feet at Bay St. Louis, Mississippi. All elevations are in feet above mean sea level, datum of 1929.

Topography

2.07 The study area consists of two distinct topographic divisions—the coastal flatwoods and the pine hills or coastal plains. The portion of the study area immediate to the project is located in the coastal flatwoods which border Lake Borgne, Mississippi Sound, and Lake Pontchartrain. The elevation in the flatwoods varies from sea level to 25 feet.

Soils

- 2.08 Soils in the coastal flatwoods area are composed of tidal marsh, alluvial land, loamy sands, sandy loams and silty loams. The portion of the study area immediate to the project is tidal marsh land, found in association with salt or brackish water. The soil consists of partly or entirely decomposed marsh plants over mineral soil, and as such, is suitable habitat for waterfowl, fish, marsh animals, and some forms of outdoor recreation. Tidal marsh soil severely limits the various forms of urban development because of the high water table, high incidence of flooding, low bearing value, and a high corrosion potential.
- 2.09 Slightly back from the immediate area, alluvial land is predominant. It consists of stratified material deposited by the Pearl River, and it lacks profile development. It is usually densely forested, with mixed hardwoods, and is very suitable for timber production, wildlife habitats, and outdoor recreation. Urban developments are severely limited.

Drainage

2.10 In low, flat sectors of the coastal flatwoods, the drainage is very poor and subject to periodic flooding and tidal action. The study area as a whole is located in the lower part of the Pearl River Basin and the coastal streams basin.

Land Area

2.11 The general study area encompasses 1,372 square miles, or 878,080 acres. This is the total land area of the two political subdivisions of St. Tammany Parish, Louisiana, and Hancock County, Mississippi. The relative stature of each of these subdivisions is shown in Table 1.

Table 1
LAND AREA OF POLITICAL SUBDIVISIONS IN STUDY AREA

lolitical	Area	Percent of		
Subdivision	Square Miles	Acres	Total	
St. Tammany Parish, La.	887	567,680	64.8	
Hancock County, Miss.	482	310,400	35.2	
Total	1,369	876,160	100.0	

Land Use--General

- 2.12 The study area is predominantly rural in nature. This rural land is basically forestland, cropland and pasture.
- 2.13 Of the 567,680 acres in St. Tammany Parish, approximately 72 percent is in forests. Cropland occupies some 13 percent, while water and marsh areas account for about 10 percent of the total. Other land covers between five and six percent of the parish.
- 2.14 In Hancock County, substantial changes in forest, crop, and pasture land occurred between 1958 and 1967. During this period, both cropland and pasture land decreased, while forest-land increased. In 1967, approximately 69 percent of the county was in forests. Crop and pasture land accounted for 4.3 percent and 3.5 percent, respectively.
- 2.15 The highest density of urban development (and virtually all of such development) in Hancock County has occurred along the coastal sector near Bay St. Louis.

Land Use--Projected

- 2.16 Historically, land use in the region has tended to create urban development along the coastline and railways. From Alabama to Louisiana there exists an expanding urbanizing strand of communities, separated only by natural barriers. One such barrier is the Lower Pearl River Basin. From the Louisiana line westward, urbanization has been significantly slower than on the Mississippi coast, perhaps due to the barrier separation of the Pearl River but mainly because of the separation of New Orleans from the study area by Lake Pontchartrain.
- 2.17 In the past, growth has been greatly reinforced by the location of major transportation arteries, for railways, vehicular traffic, and waterborne vessels. It is expected that this trend will

accelerate, reinforced by the natural attributes of the area and the impact of the interstate highway system, which is generally inland from the coastline. It is expected that significant urban development will occur along these corridors, usually with emphasis on highway-oriented uses. Extensive urban development of other types is expected to occur in the near future along the corridors in St. Tammany Parish and Hancock County. Smaller urban areas not closely related to the corridor are expected to continue to expand, though at a slower rate.

- 2.18 The predominantly rural portion of the study area is expected to continue as such, considering the emphasis placed on reforestation and the wood products industries there, as well as the nation-wide trend for the rural populace to migrate to major urban areas.
- 2.19 Basically, the emerging pattern of land development will continue as in the past with the highly urbanized growth continuing to fill in along the Gulf Coastline, Lake Pontchartrain shoreline, and interstate highway corridors, and gradually expanding further inland.

Recreation

- 2.20 The study area has a wide range of rich recreation resources. For instance, there are over 600,000 acres in forestland and approximately 8,000 acres of sixteenth section land (land owned by Parish/County school boards) in St. Tammany Parish and Hancock County. The major rivers in St. Tammany include the Pearl and West Pearl, Bogue Falaya, Tchefuncte, and Bogue Chitto. The Pearl and Jourdan Rivers are notable in Hancock County.
- 2.21 The West Pearl River, from the state line to its entrance into Lake Borgne, was included in the Louisiana Natural and Scenic Rivers System through an act of the legislature in 1972. Also designated as such were the Tchefuncte and Bogue Chitto Rivers, portions of which are in St. Tammany Parish.
- 2.22 There are no major lakes or reservoirs in the study area, excluding Lake Pontchartrain on the southern edge of St. Tammany Parish. The coastline of Hancock County and the lakefront of Lake Pontchartrain have numerous sand beaches, which are generally undeveloped. Probably the most abundant and potentially most important natural recreation resources for the area are the waters of the Mississippi Sound and Lake Pontchartrain, and the marshy area between the West Pearl River and the Mississippi-Louisiana State line.
- 2.23 Three state parks exist in St. Tammany Parish, including Bogue Falaya, Fontainebleau, and Fairview Riverside. Also in

this portion of the study area are the Pearl River Wildlife Management area (25,546 acres) and the St. Tammany Wildlife Refuge (1,600 acres).

- 2.24 There are no significant existing state or local parks in the Mississippi portion of the study area; however, a comprehensive regional plan for recreation, which includes Hancock County, has been developed by the Gulf Regional Planning Commission.
- 2.25 None of the existing or proposed recreation developments are in the immediate vicinity of the project.
- 2.26 Existing and proposed recreational facilities for the study area are shown in Figure II and the accompanying tabulation.
- 2.27 There is also a large, but not precisely determined, sport-fishing industry in the area. According to statistics in 1970 National Survey of Fishing and Hunting, some 2,272,000 saltwater fishermen spent \$404,646,000 and caught 485,728,000 pounds of fish during 34,624,000 recreational days on the Gulf Coast in 1970. What portion of this was spent in the study area is unknown.

Population

- 2.28 Changes in population usually occur in direct response to the level and nature of economic activity, a fact demonstrated by the steady increase in population in the study area. From 1960 to 1970, population of the region increased 28,290, or 53.7 percent. Major features which make the study area inherently attractive include the subtropical climate, abundance of fresh water, forest resources, and its proximity to ocean and world sea lanes. The economic development of the region has provides the employment base to support the growing population, as indicated in Table 2.
- 2.29 The figures indicate that St. Tammany Parish has experienced phenomenal growth rates, which are influenced by New Orleans, while Hancock County has been expanding at a somewhat slower rate.
- 2.30 The population growth within St. Tammany Parish has been far above the state and national rates. Between 1950 and 1960, the parish had a 43.2 percent increase in population. All of the urban places (Covington, Mandeville, and Slidell) experienced gains, but the growth of Slidell as a population center has been exceptional. Between 1960 and 1970, Slidell more than doubled its population and accounted for a large portion of the parish total population growth. The growth of St. Tammany Parish as a whole should continue at much the same rate as it has been, due to the continued influx of population from Orleans and Jefferson Parishes. Population figures for selected urban areas in St. Tammany Parish are shown in Table 3.

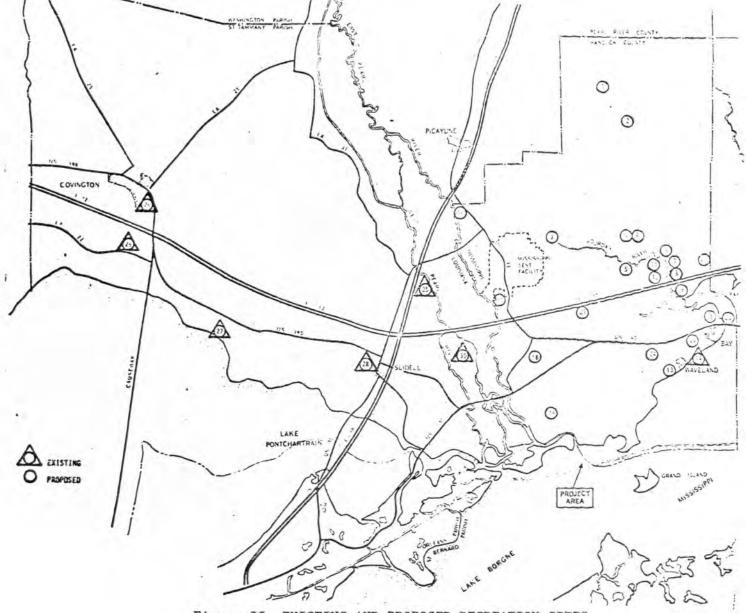


Figure II EXISTING AND PROPOSED RECREATION SITES

EXISTING AND PROPOSED RECREATIONAL RESOURCE SITES

Hancock County

No.	Name
1	Hickory Creek Reservoir and Recreation Area
2	White Creek Reservoir and Recreation Area
3	Jourdan River Tributaries Recreation Areas and Scenic Streams Project
4	Kiln Restoration, Recreation and Tourist Area
4 5 6 7	Upper Jourdan River Park
6	Middle Jourdan River Park
7	Holly Bluff Gardens
8	Darwood Gardens and the Lower Jourdan River Park
9	Lower Jourdan River/Bayou LaCroix Park
10	Middle Bayou LaCroix Park
11	Regional Amusement Park Site
12	2nd Half of Regional Amusement Park Site
13	Jackson Ridge State, Regional or County Park
14	Hancock County Beach (Existing)
15	"Booker Street" Community Park
16	Hancock/Pearl River Park
17	Napoleon Park
18	Pearlington Park
19	Jackson Landing/Mulatto Bayou Site
20	Interstate Highway 10 Rest Area
21	Interstate Highway 10 Hospitality Station
22	Seminary Park Project
23	City or Community Park
24	Bayside Community Park

St. Tammany Parish

23	reall kivel kecleational boatway (Existing)
26	Bogue Falaya State Park (Existing)
27	Fontainebleau State Park (Existing)
28	Pine Park (Existing)
29	Fairview Riverside State Park (Existing)
30	Pearl River Wildlife Management Area (Existing)
31	Pearl Piver Roatramn (Evicting)

Table 2
POPULATION PATTERNS IN PEARL RIVER STUDY AREA

Area	1950	1960	1970	Percent Change 1950-1960	Percent Change 1960-1970
St. Tammany Parish, La.	26,988	38,643	63,585	43.2	64.5
Hancock County, Miss.	11,891	14,039	17,387	18.1	23.8
Total	38,879	52,682	80,972	35.5	53.7

Source: Statistical Abstract of Louisiana, Mississippi Statistical Abstract and Gulf South Research Institute.

Table 3
POPULATION FIGURES FOR SELECTED URBAN AREAS IN ST. TAMMANY PARISH

Area	1970	1960	1950	1940
Slidell	16,101	6,356	3,464	2,864
Covington	7,170	6,754	5,113	4,123
Mandeville	2,571	1,740	1,368	1,326
Abita Springs	839	655	559	528

Source: Louisiana Almanac, 1973-74.

2.31 The population of Hancock County has been growing at a relatively strong rate since 1950. In the decade 1950 to 1960 Hancock County's growth rate (18 percent) was approximately equal to the national rate. In this period, migration to the resort and recreational areas of Bay St. Louis and Waveland accounted for most of the population growth within the county. Between 1960 and 1970, the population grew at an above average rate (23.8 percent). Much of this growth was in response to the establishment of the NASA NSTL and involved some population relocation within the county. Although the facility was phased down between 1965 and 1970, it has since enjoyed gradual growth. This factor, coupled with the port and harbor development, should continue to encourage population growth in the southern parts of the county.

Economy

- 2.32 Historically, the economic bases of St. Tammany Parish and Hancock County have been oriented toward the extraction of natural resources. Commodities such as fishery products were delivered elsewhere for processing. St. Tammany and Hancock both benefit economically from their wild climates and seashore locations. As the extensive natural resources of the area were gradually exploited, the economic pattern of the area changed from an agricultural economy to a more diverse economy.
- 2.33 Traffic on the East Pearl River has declined considerably in recent years after peaking in 1965 when 234,092 tons were transported. That figure dropped to 7,800 tons in 1972 but recovered to 11,675 tons in 1973 and 11,444 tons in 1974. The 1974 tonnage figure consisted of 11,300 tons of marine shell and 1,144 tons of iron, steel shapes, etc. Commercial traffic on the East Pearl River is represented in the following list.

WATERBORNE	COMMERCE	FOR	EAST	PEARL	RIVER
------------	----------	-----	------	-------	-------

Calendar Year		Tonnage	
1962		66,997	
1963		74,186	
1964		165,913	
1965		234,092	
1966		46,657	
1967		33,539	
1968		20,626	
1969		40,428	
1970		33,942	
1971		9,069	
1972		7,800	
1973	2	11,675	
1974	5	11,444	

- 2.34 In recent years, the greatest gains in employment in St. Tammany Parish have been in retail trade, service industries and construction. This trend is expected to continue in the future.
- 2.35 Mineral production in the parish consists primarily of natural gas, gravel, sand, and shells. The production of these resources is expected to grow gradually due to the expansion in chemicals and construction in the area.
- 2.36 Agricultural employment has decreased substantially and should fall even more due to the increased urbanization trend in St. Tammany Parish. Absolute gains in manufacturing have taken place

over the past 25 years or so, but the relative percent of employment has changed very little.

- 2.37 Among the factors which should insure a growing and diversified industry in future years are the growing consumer market which is developing on the Gulf Coast, the excellent transportation network in the region, increasing income, and the growing demand for products which depend on the use of local resources.
- 2.38 Historically, the economy of Hancock County has been oriented toward the extraction of forest and sea products. Gradually, the economy of the county has become more diversified, as it has shifted emphasis from the extractive industries to tourism to construction and finally to today's somewhat more diversified economy.
- 2.39 Hancock County has an adequate labor supply, although a relatively large number of the employables are in the upper age bracket, indicating the influence of semiretired individuals in the labor market. The labor force itself, as a percentage of population, is somewhat lower than the national average because of the presence of so many retired persons. Of the labor force that is within Hancock County, only 66 percent were employed within the county in 1970, indicating that any economic problems present in the county are due to lack of economic opportunity, rather than lack of an adequate labor supply.
 - 2.40 The major economic advantages of Hancock County include its good water supplies, timber lands, seashore location, and subtropical climate. The rapid development of tourism in the recent past and the influx of government expenditures in the form of scientific programs have provided significant changes from the old harvest-type economy.
- 2.41 The reliance on tourism as an economic source peaked in 1963, and its place as the prime motivator in the economy was relinquished shortly afterward to construction and service industries. The construction of the NASA NSTL in the mid-1960s was the major force in shifting the economic emphasis from tourism to construction and services. The effect on wages in Hancock County has likewise been significant. In 1966, wages in Hancock County were the highest in the state of Mississippi. However, due to the phase-down of the NASA NSTL, which started in 1968, its influence in the economy has lost much power.
- 2.42 Trade and service industries continue to occupy more important positions in the Hancock County economy. Wholesaling, which was second in economic importance in 1963, has all but become extinct as a major economic force. Construction continues to occupy a

greater economic role in spite of the phase-out of government expenditures, primarily due to the work that was created by Hurricane Camille and recent land developments, notably the Diamondhead development.

- 2.43 Manufacturing is not so important a source of employment as it once was. There were fewer people employed in manufacturing in 1963 than in 1958. Fewer workers at higher salaries in manufacturing decrease its contribution to employment. Gains have occurred, however, in the fabricated metals and miscellaneous categories.
- 2.44 Agriculture and forestry, which were once the economic mainstay of Hancock County, occupy a small portion of the dol.ar economy, while occupying 80 percent of the land. There have been some advances in agricultural production, but the gains are below national gain rates. Timber production has been given up to a certain degree because of the NASA Facility and other more profitable land uses, such as industry, land development, and field crops.
- 2.45 The Hancock County economy in its growth period responded to an influence (NASA NSTL) rather than initiating change, and the growth that occurred during the mid-1960s did not occur in manufacturing and industry, but rather in services related to the NASA Facility itself.

Fish and Wildlife

- 2.46 The commercial fishing industry is an important factor in the economics of both Louisiana and Mississippi. The entire catch does not come from the estuarine areas, but it is heavily dominated by species that are dependent upon the estuaries at some point in their life cycle. Gunter (1967) indicated that 97.5 percent of the total commercial catch from the Gulf of Mexico was estuarinedependent. The size of catches has fluctuated considerably through the years, increasing to record totals for both states in 1971. In that year, Louisiana landings amounted to 1,396,214,000 pounds worth \$72,630,000. Statistics for Mississippi in 1971 show a total catch of 397,605,000 pounds, valued at \$13,380,000. Commercial landings decreased for both states in 1972, with Louisiana catches weighing in at 1,070,597,000 pounds (worth \$71.9 million) and Mississippi totalling 260,216,000 pounds (valued at \$11.9 million). The freshwater fishery is significant in the area, as verified by the fact that commercial freshwater landings averaged over 20,600 pounds annually in St. Tammany Parish from 1963 to 1971.
- 2.47 On the Gulf Coast the order of contribution by weight is menhaden (Brevoortia sp.), industrial bottomfish, shrimp (Penaeus aztecus) and (Penaeus setiferus), oysters (Crassostrea virginica), and blue crabs (Callinectes sapidus). The order of importance

economically is menhaden, industrial bottomfish, shrimp, red snapper (Latjanus campechanus) blue crabs and oysters.

- 2.48 The dominant benthic organisms in the project area would be expected to be Polychaete worms Neritina recliuata and molluscs, Littoria irrorata, Polymesoda carolinensis, and Rangia cuneata. The area also has an oyster reef approximately four miles from the disposal area in Heron Bay. There are also two planned shell planting areas in Heron Bay. Both of these areas approach to within approximately one-half mile of the disposal areas. Personnel of the Mississippi Marine Conservation Commission estimate that, as of August 31, 1973, all of the oysters in this area have been killed by the large freshwater influx from the Bonnet Carre Spillway. In June 1974, the Louisiana Wild Life and Fisheries Commission planted 20,000 cubic yards of oyster cultch material at Petit Pass to facilitate oyster reproduction. The oyster population has almost completely recovered and the planted areas will be brought into production in the fall of 1975.
- 2.49 The most numerous fishes in the shallow waters surrounding the East Pearl River entrance channel are: silverside (Menidia beryllina), sheepshead minnow (Cyprinodon variegatus), anchovy (Anchoa mitchilli), mullet (Mugil cephalus), and longnose killifish (Fundulus similis). Largescale menhaden (Brevoortia patronus), rough silverside (Membras vagrans), rainwater killifish (Lucania parva), Gulf killifish (Fundudus grandis), white mullet (Mugil curema), pinfish (Lagodon rhomboides), Atlantic croaker (Micropogon undulatus), and the naked goby (Gogiosoma bosci) are also common but much less numerous. Large fishes and crabs—including many commercial species—also visit the area to feed. The most common fish in the deeper channel waters are probably croakers (Micropogon undulatus), anchovies, catfish (Galeichthys felis) and sand trout (Cynoscion arenarius) [Gunter, 1967].
- 2.50 The most commonly observed birds over the open waters of this area are herring gull (Larus argentatus), ring-billed gull (Larus delawarensis), laughing gull (Larus atricilla), Forster's tern (Sterna forsteri), royal tern (Thalasseus maximus), Caspian tern (Hydroprogne caspia), and black skimmer (Rynchops nigra).
- 2.51 The marshes surrounding the area are important for many species of shorebirds and for ducks and geese. This area represents the most important Mississippi wintering grounds for ducks, and this is particularly true for the blue goose (Chen caerulescens), which concentrates in the marshes near the Pearl River.
- 2.52 Snakes of the genus <u>Natrix</u> and the cottonmouth (<u>Agkistrodon</u> <u>pisciverous</u>) are found in the area as are the diamondbacked terrapin (<u>Malaclemys terrapin</u>) and the Gulf coast toad (<u>Bufo valliceps</u>).

The most abundant mammals are the muskrat (Onbatra zibethicus) and the nutria (Myocastor coypus). Other species which may occur include various small mammals, as well as the mink (Mustela vison) and the otter (Lutra canadensis).

Vegetation

2.53 Marshes border the East Pearl River outlet. These marshes typically consist of black rush (Juncus roemerianus) with oyster grasses (Spartina alterniflora) on the edges. Spartina cynosuroides, wiregrass (Spartina patens), and Olney's bulrush (Scirpus olneyi) are found intermixed with the Juncus roemerianus. There are also "Salt flat" areas within the saline marsh where Distichlis spicata, Salicornia biglovii, Suaeda linearis, Batis maritimus, Juncus roemerianus, Limonium carolinianum and Aster teniufolius are found.

Sediment Composition and Quality and Water Quality

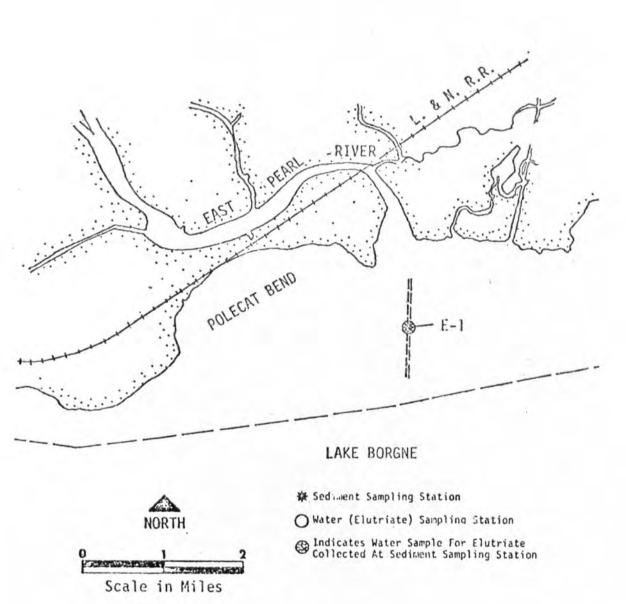
- 2.54 The East Pearl River entrance channel is located in a comparatively deep channel between shallow coastal flats in the eastern portion of Lake Borgne. Subsequent to completion of the draft environmental statement, the Mobile District Corps of Engineers undertook a comprehensive sediment sampling program across the district. Field sampling was conducted in July, August, and September 1974. The East Pearl River channel portion of the sampling program included one sampling station, located at the channels midlength, see Fig. III. The data included physical data obtained from sieve and hydrometer analyses, chemical data obtained from bulk analysis, bacteriological data, and chemical and heavy metal constitutents obtained from the elutriate analysis, as indicated in Appendix A.
- 2.55 The Lake Borgne area, as a whole, has salinities which seldom rise above $10^{-0}/00$. Average monthly dissolved oxygen levels for Lake Borgne range from 4.4 ppm to 8.4 ppm. The project area is greatly influenced by drainage from the Pearl River, so salinities can be expected to be lower and turbidities can be expected to be higher than in other areas of Lake Borgne (Barrett, et al., 1971).

Immediate Study Area

- 2.56 The immediate project study area includes the disposal area and that area around it within one-half mile (Figure IV).
- 2.57 The project is located immediately south of the mouth of the East Pearl River, in Lake Borgne. Land areas within the immediate area include salt water marsh to either side of the mouth and a small island approximately one-fourth mile west of the channel. The Gulf Intracoastal Waterway is the southern boundary of the immediate study area. The proposed disposal site consists entirely of water bottoms.

Figure III

LOCATION OF THE SEDIMENT AND WATER SAMPLING STATION, EAST PEARL RIVER, MISSISSIPPI AND LOUISIANA



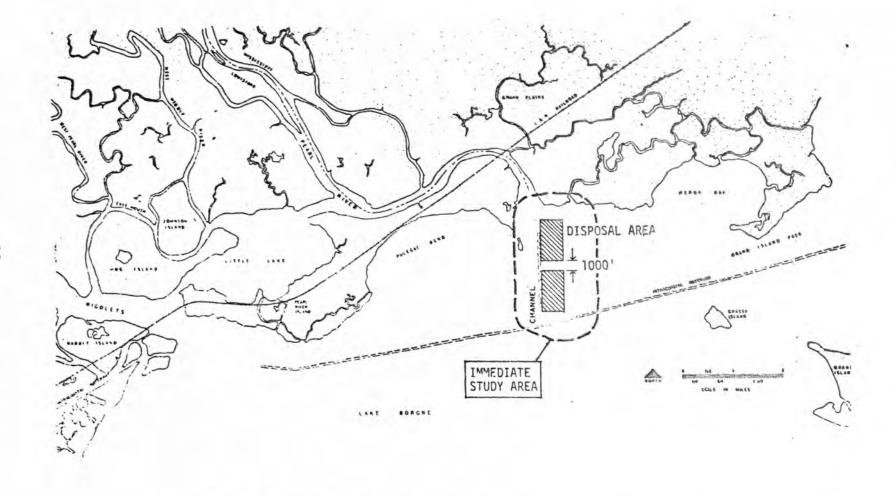


Figure IV. IMMEDIATE STUDY AREA OF EAST PEARL RIVER ENTRANCE CHANNEL

- 2.58 Lake Borgne experiences a very small tidal fluctuation. There is a diurnal tidal range of approximately 1.5 feet and a mean tide level of 0.8 to 0.9 feet. The tide is strongly influenced by winds, which can considerably raise or lower water levels, according to their direction, strength, and duration.
- 3. Relationship of Continued Operation and Maintenance of the Project to Land Use Plans: Continued operation and maintenance of the East Pearl River project is consistent with the stated goals and load use objectives of the Gulf Regional Planning Commission and the St. Tammany Planning Commission.
- 4. Environmental Impact of the Proposed Action: The environmental impact of the proposed action may be considered in terms of the direct and indirect physical and biological effects of maintenance dredging and the disposal of this material, the effects of resulting turbidity, and the benefits of the operations on commercial and recreational boating interests on the project waterway.
- 4.01 Esthetics and Beautification: The maintenance of the project will not result in any significant alteration of the existing esthetics of the study area. It is remotely possible that the shoreline estuary area may be temporarily degraded by deposition of silt. The dredged material deposited will not be visible above the water surface.
- 4.02 Air and Water Quality: The maintenance of the project will have no appreciable effect upon the quality of air or water.
- 4.03 Air quality will be affected for a short period of time by the fuel consumption and resulting engine exhausts of the dredge and dredge tenders. This is considered to be insignificant when compared to the existing exhaust fumes created by waterborne traffic in the Gulf Intracoastal Waterway nearby.
- 4.04 Water quality will be most greatly affected in the immediate dredging and disposal areas because of the increased turbidity. Turbidity levels will be raised over a limited, but not precisely forecast area around the discharge which may extend for more than 1,000 feet in various weather conditions. There will also be a minimal area of increased turbidity around the cutterhead. Turbidity will be coincident with dredging and turbidity levels will subside rapidly when dredging ceases.
- 4.05 <u>Sediment Composition and its Environmental Impact</u>. The chemical and biological effects of dredged material discharge on water quality and aquatic life are not clearly defined. The EPA bulk analysis guidelines presented in 1971 contained suggested guidelines for determining

the suitability for disposal of dredged material into open waters. The guidelines give allowable concentrations for seven constituents considered to be pollution indicators for sediments, see Table D-1. These seven constituents, however, are determined by a bulk analysis technique which is widely questioned as an accurate indicator of the availability of the various constituents to the water column and aquatic environment. Subsequently the elutriate test, which is being examined for analytical revision, was developed to detect the dredged sediments release of contaminants to the receiving water column. However, the test results lack varacity since research has not sufficiently progressed to generate auswers regarding the results meaning to the biotic community, particularly the interrelationships of the contaminents durability and the organisms susceptability. Therefore, there, are no generally agreed upon guidelines which can be used to quantitatively judge the pollutability of dredged sediments in riverine, estuarine, or ocean water systems. However, the established Environmental Protection Agency (EPA) interim final guidelines for discharge of dredged or fill material into navigable waters. published in the Federal Register of 5 September 1975, indicate that the elutriate test, physical and bulk analysis, bioassays and biological evaluation can all be used to subjectively evaluate the suspended sediments pollutability.

- 4.06 Appendix D contains the results of the 1974 East Pearl River portion of a comprehensive District-wide sediment sampling program conducted for inclusion in, but before coordination of, the draft environmental statement. It contains the preliminary results of the physical, chemical, bacteriological, and residue analyses for chlorinated hydrocarbons, organo-phosphates, and polychlorinated biphenyls. In the absence of specific criteria for inland waters, these results are summarized below with the bulk analysis data being related to EPA's 1971 bulk analysis guidelines and the elutriate data being related to EPA's 1973 proposed criteria for marine water quality. These comparisons will give some degree of insite into the sediments potential pollutability.
- 4.07 For the physical analyses the sediment of the East Pearl River channel was classified as silt with low liquid limits (ML), see Figures D-1 and D-2. This silt texture will be the source of significant turbidity, however, it will have only limited effect on benthic organisms since it will be localized and temporary.
- 4.08 For the chemical analyses the suggested 1971 bulk analysis guidelines were not exceeded, see Table D-1. Likewise no elutriate tests exceeded the 1973 proposed criteria for marine water quality except for
 mercury which is of potential environmental concern; yet, even this
 is considered to be inconsequential because of dilution, and the
 exposure time of an organism to the elemental concentration of concern.
 This lack of heavy metal release from suspended sediments can be
 supported by Windoms Study (1973) of changes in heavy metal concent
 trations resulting from maintenance dredging of the Mobile Ship Channel in

Mobile Bay, Alabama, in which he concluded that heavy metal dispersion by suspended sediments is not followed by significant metal release except possibly briefly with zinc and iron. Also, some metals, such as arsenic, may be partially withdrawn from the water column by sorption in the suspended sediments, see Table D-3. It was further determined that variations in metal levels in Mobile Bay waters show no relation to dredging activities but appear to be more influenced by natural processes, such as runoff. Increased levels of metals in the water column were found near the discharge end of the dredge pipeline, but these were localized.

- 4.09 Bacteriological and pesticide data can be found in Tables D-1 and D-2. At the present time there are no specific pollutional guidelines for bacterial numbers found in sediments; however, even with the seemingly high bacterial numbers, any bacterial resuspension caused by sediment disturbance will be localized and temporary. The pesticide analyses showed all pesticides to be below the minimum detectable levels. However, if detectable pesticide levels were found, they would not be of significant environmental concern since pesticides are generally insoluble in water and have negligible desorption from the locally and temporally resuspended dredged materials (Fulk, 1975).
- 4.10 <u>Food and Fiber</u>: The present method of maintaining the project will have no effect on food and fiber, since it does not utilize any additional land. Effects on the supply of fish and invertebrate organisms are considered insignificant.
- 4.11 <u>Land Requirements</u>: No additional land will be required to maintain the present project. The area to be used for disposal is entirely within Lake Borgne.
- 4.12 <u>Noise Control</u>: Dredge noise may hinder recreational use of the area during the dredging operations; however, the impact should be of short duration. Noise associated with the maintenance activities may also affect waterfowl during the nesting season.
- 4.13 Recreation: The maintenance will have a favorable effect on recreation b, insuring that the East Pearl River will remain accessible to deep draft pleasure craft. However, increased use of the river by private and commercial vessels will lead to more air and water pollution from solid wastes, exhaust fumes, and refuse. In times of unusually low flow, pollution from diesel fuel, gasoline, and other refuse could become environmentally degrading.
- 4.14 <u>Safety</u>: The maintenance will provide for the removal of shoaled matter in the navigation channel, so as to allow for safe navigation by commercial and private vessels and recreationists.

- 4.15 Flood and Drainage Characteristics: The maintenance of the project will have no detrimental effect on the flood reduction or drainage characteristics of the area. Instead, it will have a positive effect by insuring the continued efficiency of the design flow of the East Pearl River outlet.
- 4.16 <u>Waste Control</u>: The maintenance contractors are required, as part of their contractual obligation, to deposit all waste material and garbage generated on the floating plant on land in an approved dump area.
- 4.17 Water Supply: The project will have no effect on the water supply of the municipalities along the river.
- 4.18 <u>Human Well-Being</u>: The project will enhance the study area economy by insuring its continued diversification, by allowing waterborne vessels access to the NASA NSTL. This Facility provides employment for a large number of persons in the area. The project will also enhance the recreational potential of the East Pearl River and the surrounding area by increasing private deep-draft watercraft access.
- 4.19 <u>Historical</u>: This proposed action will not adversely affect any existing, proposed, or known potential units of the National Park System, or any known historic, natural, or environmental education sites eligible or considered potentially eligible for the National Landmarks Program.
- 4.20 The National Register of Historic Places was consulted with determination that there are no National Register properties located within the study area which will be affected in any way by the proposed action. Consultation with the Louisiana Department of Art, Historical and Cultural Preservation and the Mississippi Department of Archives and History revealed that there are no known historical or archeological sites located adjacent to the proposed project. It is possible that there are undiscovered sites in the project area since no comprehensive survey of the Pearl River Basin has ever been made.
- 4.21 Several known sites do exist in the general study area, but none of these will be affected in any way by the proposed work.
- 4.22 Fish and Wildlife Resources: There will be a temporary degradation of water quality in areas around the dredging operations, due to increased turbidity; however, the area normally exhibits high turbidities, and this temporary increase should not cause any major problems. The American alligator (Alligator mississippiensis)

is the only species on the Department of the Interior's Rare and Endangered Species List that is a resident in the area. The southern bald eagle (Haliacetus leucocephalus), which is also on the list, and the osprey (Pandion haliaelus), which is of undetermined status, may be visitors to the area. None of these species will be harmed by project activities.

- 4.23 Ingle (1952) investigated the possiblity that shell dredge operations, which are very similar to channel dredging operations, could damage fish and shellfish. He found no harmful effects on these organisms, and it can be assumed that this is also true of this area. Dredging operations within the area have caused no recorded damage to the oyster reef in Heron Bay. Oyster reefs have not been identified in the immediate disposal area, but there are two planned shell planting areas in Heron Bay which will approach to within one-half mile of the disposal areas. The existing Louisiana oyster leases are shown on page C-33. There are no Mississippi oyster leases in immediate proximity to the project. There are also small towhead patches of oysters throughout this section of the coast. Many of these were created when small patches of shell were exposed by previous dredging action so it is possible that some exist in the designated disposal area. It is not believed that there will be a significant amount of damage to oyster populations.
- 4.24 Material Disposal: There should be no significant detrimental impact on the environment resulting from dredging the East Pearl River entrance channel. The major detrimental effect will be caused by the dredged material. The discharge from the dredge will be directed onto a disposal area. The benthic organisms in the area being dredged are killed. The coarser materials settle out rapidly in the disposal area killing the benthic organisms which are covered. The finer suspended particles, made up of finer silts and clays, move away from the disposal area as density currents or mud flows. The extent of a mud flow, for the most part, depends upon the type and quantity of sediment resuspended. Observations of shell dredges and channel dredges have indicated mud flows to extend 1,600-2,000 feet in some instances while in other instances mud flows were not observed to form. An unknown number of the benthic organisms which are buried by this plume are killed; however, there is a possibility that some motile benthic organisms will migrate upward through the settling mud flow and survive. Any disposal bank buildup which does occur immediately after dredging is slowly dissipated over a wide area until pre-disposal bottom elevations are reached, with dispersion being a question of current patterns and time. This slow dissipation will enable the majority of motile benthic organisms to react and survive.

- 5. Adverse Environmental Effects Which Cannot Be Avoided Should Proposal Be Implemented: Some benthic organisms will be lost from the channel and at the disposal sites during dredge operations. This is a temporary condition, as refaunation will occur. Species diversity, however, does not fully recover. There will also be a temporary degradation of water quality in areas where the turbidity levels are raised by dredge operations.
- 6. Alternatives to the Proposed Action: The following alternatives were presented in the draft statement. They have been expanded in view of comments received on the draft statement, and as discussed in Section 1 of this final statement, the alternative of leaving an opening in the disposal area for improved circulation will be implemented.
- 6.01 Disposal of the material by barging from the site to another remote disposal area is possible (alternative A in the DEIS). An estimated annual cost of \$107,000 would be required for the use of dump scows with an hydraulic dredge although the scows may not be readily available. The cost of implementing this alternative, however, on only the basis of current benefits derived from the project would result in an unfavorable benefit cost ratio, thereby prohibiting continuation of maintenance of the project.
- 6.02 The environmental effects of this alternative would include loss of the benthic organisms in the dredged sediments and also in the chosen disposal area. If a non-estuarine area were used for disposal, the potential damage to the fragile estuarine environment would be less.
- 6.03 Disposal of the material could be on nearby islands or shoals (alternative B in the DEIS). However, there are no non-marsh islands in proximity to the project... Therefore deposition of dredged materials on islands is likely to be harmful. Deposit on shoals could prove hazardous to navigation. During coordination of the revised draft environmental statement, the Louisiana Wild Life and Fisheries Commission suggested that the dredged material be used for marsh building, and recommended two sites. One site is located just north of the upper end of the present disposal area in Mississippi and the other approximately 2-1/2 miles west of the project along the Louisiana coast in Polecat Bend. The two areas are shown on the map, page C-33. The costs of pumping the dredged material to the Mississippi site and the Louisiana site are estimated at \$104,000 and \$184,000, respectively. On the basis of present economic benefits derived from the project, the cost of pumping to either site cannot be justified.
- 6.04 Environmentally, this alternative would be advantageous if the effects of introducing dredged sediments into such close proximity

to the existing marsh are discounted. Additional wildlife habitat would be created and, if properly located, an existing railroad would be protected from erosion. However, the initial introduction of the dredged material would upset the existing natural balance in the adjacent marsh and the nature and duration of these effects are not known.

6.05 Disposal of material could be on shore; however, there are no upland sites within about five miles of the project (alternative C in the DEIS). Should suitable upland sites be available the cost of pumping the dredged material would be prohibitive. The cost of pumping the material a distance of five miles is estimated to be \$314,000 which would result in unfavorable benefit-cost ratio based on current economic benefits derived from the project. Only the benthic organisms in the dredged sediments would be killed. The disposal area itself would be visually unattractive and would give off an unpleasant odor for a period of time after disposal.

6.06 By leaving an opening in the center of the disposal area, offshore currents parallel with the shore would be less obstructed and better circulation of the adjacent shallow water areas would be provided (alternative D in the DEIS). The cost of disposal by this alternative will not be significantly greater than for that presently used. This method will be implemented; however, it is not certain whether the opening will remain due to wind and tide induced shifting of the dredged material.

6.07 Staggering the disposal areas on each side of the channel would also allow for better water circulation in the area (alternative E in the DEIS). The cost should not be significantly greater than the present method of disposal. The western disposal area would include a portion of an existing oyster lease and would be in proximity to another, resulting in a negative impact on oysters.

6.08 Dredged material could be placed in a designated are on the west side of the channel (alternative F in the DEIS). The relative benefits or adverse effects resulting from such a placement cannot be accurately determined due to lack of available information on current patterns in the vicinity. However, upon examination of aerial photographs, it is believed that current patterns will carry the sediment southeastward, back into the channel. Also, this disposal area would include part of an existing Louisiana oyster lease and would lie in close proximity to another leased area. The results would be destruction of both oysters and oyster habitat in the disposal area, and sedimentation in the adjacent areas.

6.09 The most drastic alternative is to discontinued the project and forego the maintenance entirely (alternative G in the DEIS). This could

result in the sacrifice of any economic benefits created by the navigable river, particularly the NASA NSTL, as the East Pearl River ultimately would become non-navigable to all but shallow draft boats.

- 7. Relationship Between Local Short-Term Uses of Environment and Enhancement of Long-Term Productivity: Maintaining the East Pearl River channel will result in no basic change in either short-term or long-term use of the environment, because of the controlling of the alteration of any environmental factors, as described herein. By insuring a low-cost transportation thoroughfare for local and interstate water traffic, the proposed project will assist in maintaining the present productivity of local and regional industries, promote their expansion, and contribute to the well-being of the area residents.
- 8. Any Irreversible and Irretrievable Commitments of Resources Which Would Be Involved In The Proposed Action Should It Be Implemented: The only irreversible or irretrievable commitment of resources involved in the proposed project, other than the labor and materials to be used, is the loss of fossil fuels, a diminishing resource in this country.

- 9. Coordination With Others: A Draft Environmental Statement for the project was circulated for review and comment on 2 March 1973 to Federal and State agencies and to citizens' groups and interested parties in the State of Mississippi. A press release was made on the same date informing the public that the draft statement was available for review and comment. The draft statement was filed with the Council on Environmental Quality (CEQ) on 1 May 1973.
- 9.01 The project was originally authorized by Congress in 1910 as the "East Pearl River, Mississippi" navigation project. Construction of the project was completed in 1911, and since that time the project has been considered a Mississippi coast project. During coordination of the draft statement it was recognized that the project channel and a majority of the disposal & tes were located within the State of Louisiana, and that the statement did not adequately reflect the interests of the State of Louisiana. Consequently, the draft statement was revised to properly reflect the location of the project. The Revised Draft Environmental Statement was filed with CEQ on 21 June 1974, and was circulated for review and comment to Federal and State agencies in Louisiana and Mississippi and to interested citizens' groups and individuals on 24 June 1974. A press release was made on 27 June 1974 informing the public that the revised draft statement was available for review and comment.
- 9.02 The comments which were received on the Draft Environmental Statement are contained in Appendix B. The comments were taken into consideration in preparation of the Revised Draft Environmental Statement and the Final Environmental Statement. The revised statement was furnished to these agencies and individuals for review and comment.
- 9.03 The comments which were received on the Revised Draft Environmental Statement are contained in appendix C. These are summarized below.

9.04 Comments By Government Agencies

a. ENVIRONMENTAL PROTECTION AGENCY, REGION VI (page C-1)

COMMENT (1): We believe the statement, "There are no other Federal actions which, in connection with this project, would constitute a cumulatively significant impact on the environment" appearing on page 1 of the draft statement needs clarification. This statement could be interpreted to mean no other Federal projects are in the vicinity of the project, or, that it has been determined that such projects will not significantly affect the proposed project. We would suggest that the final statement discuss other Federal, state, and local projects (if any) which might be located in the vicinity of the proposed action. Existing maintenance projects should be discussed because of the combined environmental effects such operations could extort on the aquatic ecosystem. Also, if it has been determined that the environmental impacts of

the dredging projects in the area are not related to the proposed project, information substantiating this contention should be provided in the final statement.

RESPONSE: Environmental statements for the Pearl River, Mississippi and Louisiana, and Wolf and Jourdan Rivers, Mississippi, have been completed. Additional statements for the Gulf Intracoastal Waterway and Pass Christian Harbor are currently being prepared. It is possible that the proposed actions for the Pearl and East Pearl Rivers could have a cumulative impact on the environment. However, this is not expected to be significant due to the fact that the proposed action on this project is concerned only with the entrance channel, while any work on the Pearl would be from its mouth to Bogalusa, Louisiana.

COMMENT (2): The final statement should provide additional information concerning the environmental effects of past maintenance dredging activities on the East Pearl River. This information would be helpful in assessing the potential impacts of the project on the terrestrial and aquatic environment. Existing water quality information should be provided in order to evaluate the impacts of dredging on water quality. Also, we would suggest that a water monitoring program be implemented at the project site which would at a minimum, record dissolved oxygen, turbidity, and heavy metal concentrations before, during and after maintenance dredging. Assurances that state water quality standards will not be exceeded during the maintenance operation should be given in the statement. If concentrations of pollutants should reach levels harmful to aquatic life, we suggest that temporary suspension, reduction or other modifications of the operation be considered until such time that water quality returns to acceptable levels.

RESPONSE: There is no information available on the environmental effects of past operations and maintenance activities on the East Pearl River. There is a study currently in progress on the quality of sediments to be dredged, the results of which will be available before implementation of the proposed action. Because of the short duration of the dredging involved in implementation of the project, no water monitoring program will be set up.

COMMENT (3): According to the draft statement the shoreline estuaries in the vicinity of the project could be temporarily degraded by silt deposition. Since estuarine communities are considered fragile and represent a resource of value, we believe additional discussion of the possible adverse impacts on the shoreline estuaries should be included in the final statement.

RESPONSE: The shoreline estuaries are approximately half a mile reroved from the disposal area and because of this distance no significant impacts from silt deposition are expected.

COMMENT (4): As indicated in the statement, the disposal of the dredged material as shown on Figure III (page 24) could result in an alteration of flow patterns along the coast, thus resulting in possible adverse effects on water quality. However, alternatives D and E, as discussed in the draft statement, would provide for increased current circulation. In order to minimize potential adverse impacts on water quality, we would suggest that the final statement give further consideration to either alternative D or E as the method of dredged material deposition.

RESPONSE: As indicated in the final statement, alternative D will be used for the disposal of dredged material. This plan should provide for increased current circulation and minimize adverse impacts on water quality in the project area. However, it is not certain whether the opening will remain due to wind and tide induced shifting of the dredged material.

COMMENT (5): The discussion of mud flows indicates that it would be difficult to predict their presence or absence at the project site. However, it appears that mud flows could significantly affect the benthic community near the project disposal area. According to the draft statement, certain dredge sites have experienced flows extending to 2,000 feet while other similar sites had no appreciable movement. The final statement should discuss the potential impacts of mud slides on benthic organisms. Also, a discussion of the preventive measures to control mud slides, which could be applied at the site, should be included in the final statement.

RESPONSE: The potential impact of mud flows has been discussed in the statement. Mud flows cannot be prevented by normal disposal practices. However, discharging the dredged material near the bottom can reduce their prevalence. This practice will be followed.

b. DEPARTMENT OF THE INTERIOR, SOUTHEAST REGION (page C-4)

<u>COMMENT (1)</u>: The revised statement is deficient in its treatment of environmental impacts, measures proposed to mitigate any adverse impacts, and project alternatives. The statement also tends to favor project justification.

RESPONSE: It is felt that additions and revisions in the final statement adequately cover these areas of concern. The intent of this environmental statement is not to favor project justification, but rather to examine all issues on an objective basis.

COMMENT (2): The statement includes no discussion of measures which will be taken to minimize any adverse impacts resulting from the dredging and spoil deposition activity. A section should be added to the statement which addresses this subject.

RESPONSE: Additional information has been included in Section 4 referring to measures designed to mitigate adverse impacts.

COMMENT (3): Page 2, Paragraph 1: The estimated quantity to be dredged was estimated as 337,000 cubic yards in the inital draft environmental statement dated March 1973, and the source figure is given in the revised statement dated 15 months later. During the interim period the process of sedimentation of the channel has undoubtedly continued, as is true of any dredging project. We suggest that dredging requirements and any other data in the environmental statement be given to a more realistic degree of accuracy, which in this case seems unlikely to exceed one significant figure.

RESPONSE: Dredging is done only when needed to maintain the channel's navigability. The figure 337,000 cubic yards is an average and is used because navigability becomes seriously impaired when this amount of material has accumulated in the channel.

COMMENT (4): Figure II on page 11 indicates that site 15 is located in St. Tammany Parish, Louisiana. The accompanying tabulation, however, on page 12, lists site 15 as the existing Pearl River Recreation Boatway in Hancock County, Mississippi. This discrepancy should be corrected. Likewise, the map and tabulation should show the following existing recreation facilities in the area which involve federal funds: A. Pine Park-Slidell, Louisiana; B. Pearl River Boat Ramp--Pearl River, Louisiana; West Pearl Natural and Scenic River--From the Mississippi state line to its entrance into Lake Borgne.

RESPONSE: The reference to Pearl River Recreational Boatway has been corrected, and Pine Park and Pearl River Boat Ramp have been added to the map and tabulation. Mention has been made in the text of the West Pearl Natural and Scenic River.

COMMENT (5): Page 22: Table 5 is entitled "Chemical Analyses of Sediments...," but no indication is given of the number of samples, of their location, or of the range of values. We believe that complete analytical data should be provided for every sample, unless the number is very large. This provision should be made because the expense of the analyses is large by comparison with the cost of reproducing the data. In addition, multiple analyses provide an

important indication of uniformity of distribution of the pollutants, of the occurrence of anomalous analyses, and the possibility of reproducibility of the analyses. Also, the location and depth of samples should be given. If only a single analysis is available, it becomes more important to provide data on depth and location, and the validity of the results might be doubtful as applies to over 300,000 cubic yards of dredged sediments.

RESPONSE: The sediment analyses to which you refer are the results of the analyses of one sample. This sample was collected from mile $40 \cdot 1$ of the Gulf Intracoastal Waterway which is in the vicinity of the East Pearl River entrance channel.

COMMENT (6): Page 25, paragraphs, 1, 2, and 5: The dredging of 337,000 cubic yards of dredged material, and its subsequent deposition in open water east of the channel, is bound to nave significant impacts upon the adjacent estuarine environment of Lake Borgne, and should be discussed.

RESPONSE: The closest estuaries are approximately half a mile removed from the disposal area. The impacts on the project area and the estuaries of Lake Borgne are expected to be minimal with the proposed disposal area configuration.

COMMENT (7): Page 25, paragraph 5: The loss of fishfood organisms should be acknowledged. Although small, this loss will have some effect on fish and their distribution.

<u>RESPONSE</u>: This is not believed to be the intent of the section on food and fiber. This section addresses the impact on fish and invertebrate organisms used as food by man.

COMMENT (8): Page 28, paragraph 3: The result of improved navigation in the channel will cause increased boating traffic, both private and commercial. This will lead to further air and water pollution as well as solid waste accumulation. In times of unusually low river flow, pollution from diesel fuel, gasoline, and refuse thrown overboard from various crafts could become environmentally degrading. The statement relates this fact (page 26) but fails to adequately address its impacts.

RESPONSE: This has been incorporated in the final statement.

COMMENT (9): Page 26, paragraph 6: A map showing the location of the approved dump area for all waste generated on the floating plant (page 26) should be included.

RESPONSE: This location has not yet been determined and may vary with each maintenance dredging.

COMMENT (10): Page 28, paragraph 2: Statements throughout the revised draft, such as found on page 28 under n. Material Disposal, play down the negative impacts which could result from the dredging operation. The proposed action should be more fully discussed and quantified according to the following: a.) Time frame of dredge operation; b.) Length of expected turbidity; c.) Alteration or destruction of recreational or commercial fishing area; d.) Extent of possible "mud flows" (page 29) caused by dredged material placement; and e.) Effect of raising estuarine floor elevation in disposal area on deep draft pleasure boating.

RESPONSE: a.) It is expected that dredging operations would be completed within two weeks of their commencement. b.) Turbidity would be greatest during dredging operations and, under normal conditions would cease within a matter of hours after the termination of dredging. c.) The proposed project is expected to have minimal effects on recreational or commercial fishing areas because no new development will be undertaken. d.) Mud flows have been observed to extend 1,600 to 2,000 feet in some instances, while in other instances, they have not been observed to form. e.) The spoil area will be well defined and is not expected to have any adverse effects on deep draft pleasure boating.

COMMENT (11): Pages 29 and 30: The statement includes only a superficial treatment of the alternative methods of spoil disposal. The positive and negative impacts of each of the alternatives presented should be addressed more fully. The discussion should include a breakdown of cost differences for spoil removal so the reader can get a better understanding of the possible tradeoffs involved.

RESPONSE: The section on alternatives has been amended to include the information you suggest.

COMMENT (12): Page 30, paragraphs 3 and 4: Reasons for rejecting disposal methods presented in alternatives "d" and "e" should be given. Changing present patterns of current flows and water circulation may have an effect on the fishery resources of the area.

RESPONSE: Alternative D has been selected as the plan for the disposal of dredged materials, because of the fact that its effect on water circulation should be minimal. The cost of Alternative E would not be significantly greater, but would have more adverse effects, especially on the oyster beds west of the channel.

COMMENT (13): Page 30, paragraph 5: Among the alternatives to the proposed disposal of dredged material on the east side of

the channel is disposal on the west side of the channel (page 30). It is stated that "The relative benefits or adverse effects resulting from such a placement cannot be immediately determined due to the lack of available information on current patterns in the vicinity." We feel that the quantity to be dredged is sufficiently large and the disposal area is so situated that significant savings might be realized by collecting the requisite current data during the course of the initial dredging operation, or subsequently, in order to select an optimum site for disposal of dredged materials from future maintenance dredging. If only percent of the spoils could be prevented from drifting back into the channel, the savings might pay for the cost of current-data acquisition that would promote continued savings in the future.

RESPONSE: Disposal on the west side of the channel is considered less desirable because of proximity to the oyster leases in the area. Although specific data is not available, the results of previous maintenance dredgings have indicated that an east side disposal area is less environmentally damaging.

The possibility of instituting a program of data acquisition such as you suggest is being considered.

COMMENT (14): The project would not adversely affect any mineral operation or mineral resource. However, the statement indicates there will be a "loss of fossil fuels." This "loss" is apparently in reference to fuel which will be consumed by the dredging operation. The final starement might clarify this point.

RESPONSE: This has been clarified in the final statement.

c. DEPARTMENT OF COMMERCE (page C-8)

COMMENT: The Department of Commerce recognizes the necessity for maintenance dredging of commercially important waterways. The disposal of the spoil material far offshore by barge or in diked land or shallows should receive the most serious consideration in our opinion, since the currents transverse to the channel and storm waves would be detrimental to the project as now planned.

RESPONSE: These alternatives have been considered but the additional costs involved (estimated in excess of \$100,000) make the proposed disposal configuration preferable. As a result of comments received on the draft statement, an opening will be left in the disposal area to improve circulation in the adjacent shallow water.

- d. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, MISSISSIPPI (page C-9)
- COMMENT (1): The statement adequately expresses the benefits and adverse effects of the project.
- COMMENT (2): This project involves only a marine environment with no dry land excavation or deposition. We, therefore, feel that erosion carried by rainfall runoff will not be a problem.

RESPONSE: Agree.

e. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, LOUISIANA (page C-10)

COMMENT: We have reviewed this environmental statement and believe it to be adequate; we have no comments to offer.

f. DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION, SOUTHERN REGION (page C-11)

<u>COMMENT</u>: Our review indicates there will be no significant adverse effects to the existing or planned air transportation system as a result of these projects.

RESPONSE: Agree.

g. DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION, SOUTHWEST REGION (page C-12)

COMMENT: We find no adverse environmental impact nor any conflict of interest with aviation concerns of the Federal Aviation Administration.

h. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, MISSISSIPPI (page C-13)

COMMENT: We do not consider that the proposed project for continued maintenance of the East Pearl River navigation channel will have any adverse environmental effects on highway transportation in this area.

RESPONSE: Agree

i. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, LOUISIANA (page C-14)

<u>COMMENT</u>: The project should not have any adverse effect on existing highways and there are no new proposed highway projects in this vicinity.

RESPONSE: Agree.

j. DEPARTMENT OF TRANSPORTATION, UNITED STATES COAST GUARD, EIGHTH DISTRICT (page C-15)

COMMENT: We have reviewed the referenced draft environmental statement as requested and have no comments to make.

k DEPARTMENT OF TRANSPORTATION, UNITED STATES COAST GUARD, HEADQUARTERS (page C-16)

COMMENT: We have no comments to offer nor do we have any objection to this project.

1. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, MISSISSIPPI (page C-17)

- <u>COMMENT (1)</u>: Continued dredging is necessary to maintain a suitable channel to the Mississippi Test Facility (NASA NSTL) and other development in the lower reaches of the East Pearl River. For this reason, we support the project.
- COMMENT (2): Since a growing problem exists with respect to the disposal of dredged materials, as indicated on page 28, perhaps consideration might be given to transport of such materials and deposit in floodway fringe areas—in order to reduce flood hazard in those areas.

<u>RESPONSE</u>: This proposal is not economically feasible at the present time.

m. STATE OF MISSISSIPPI CLEARINGHOUSE FOR FEDERAL PROGRAMS, (page C-18 and C-21)

- COMMENT (1): Although there is no applicable State plan for Mississippi, the proposed project appears to be consistent with present State goals and policies.
- COMMENT (2): The attached letters from the Pearl River Basin D velopment District and the Mississippi Board of Water Commissioners are made a part of this final Clearinghouse action.

COMMENT (3): This notice constitutes FINAL STATE CLEARINGHOUSE REVIEW AND COMMENT. The requirements of U.S. Office of Management and Budget Circular No. A-95 have been met at the State level.

n. MISSISSIPPI MARINE RESOURCES COUNCIL (page C-19)

COMMENT (1): Chemical analysis of the bottom sediments of the Gulf Intracoastal Waterway at mile 40.1 which is in the immediate vicinity of the East Pearl River entrance channel is presented in Table 5 on page 22. The information contained in this table revealed that several chemical parameters exceeded the maximum Environmental Protection Agency criteria for open water disposal of dredged sediments. This is of particular concern to Mississippi Marine Resources Council because the suspension of contaminated bottom sediments degrades water quality and affects the ability of the water body in the vicinity to support aquatic organisms. As stated in the revised draft environmental impact statement the data on chemical analysis is from bottom sediments in close proximity to the East Pearl River entrance channel. No information is available on the chemical composition of bottom sediments within the East Pearl River entrance channel. Accordingly, we recommend that the Corps of Engineers initiate a sediment sampling program in the East Pearl River confluence channel and determine if the sediment in this area is acceptable for open water disposal.

RESPONSE (1): Table 5 has been replaced with a 1974 sediment survey of the East Pearl River channel conducted by the Mobile District Corps of Engineers.

COMMENT (2): The other major item of importance relates to the alternatives discussed in Section 5. Spoiling operations are presently planned for the east side of the channel with alternative disposal of the dredged materials by barging from the site; disposal on nearby shoals or islands; and depositing dredged material on the east side of the channel. As pointed out in our comments to you on November 7, we are concerned that oyster reefs established in the area may be adversely affected by disposal and subsequent sediment movement.

RESPONSE: The disposal areas east of the channel are well removed from the natural oyster reefs and the established oyster leases. Mud flows will not extend far enough to affect the oyster reefs and the current is sufficient to sweep away any silt particles which can be expected to reach the reefs.

COMMENT (3): Alterntives d, e, and f appear to offer promise of being significantly more desirable than the proposed action from an environmental point of view. As presented, these alternatives

evidently do not offer serious obstacles to channel maintenance, and could evidently be accommodated with relative ease. Therefore, we are extremely puzzled as to why these alternatives are not discussed further or one or a combination of several incorporated as the proposed method of performing maintenance dredging. We recommend this be given serious consideration by the Corps of Engineers and appropriate modifications made in project plans that will enhance the environmental acceptability of the project.

RESPONSE: These alternatives have been reconsidered and alternative D will be implemented. In addition, more information has been added to the section on alternatives.

COMMENT (4): The proposed period when dredging would be undertaken has not been stated by the Corps of Engineers. To avoid conflicts with post larval shrimp using the proposed dredged material areas, it is recommended that dredging be undertaken between October and February. If dredging is required beyond this period of time the Marine Resources Council should be contacted so that possible protective measures can be employed.

RESPONSE: Dredging must be done on a "priority basis" and not all projects can be dredged at the optimum time. However, to avoid the conflicts you mention, efforts will be made to schedule the dredging between October and February.

COMMENT (5): This review of the draft statement constitutes the third analysis we have undertaken of environmental impacts associated with the proposed action. We are extremely dismayed by the fact that several of our comments, recommendations, and requests of earlier reviews have not been addressed in this most recent document. This is especially discouraging in view of the fact that the environmental statement is to cover the life of the project (usually 50 years), and the impacts we have questioned pose serious environmental problems such as toxic material contamination. alteration of current patterns and water quality, and optimum dredging practices. These questions are of such magnitude and importance, especially when viewed in a 50 year perspective, that they must be investigated and addressed in any final statement prepared and submitted to the Council on Environmental Quality. Unless these points are considered, we believe that the statement is seriously deficient and does not satisfy the letter or spirit and intent of the National Environmental Policy Act of 1969.

RESPONSE: The final environmental impact statement has been changed and augmented as a result of comments received on the draft statements to which you refer. In its final form we feel that it satisfies both the letter and the spirit and intent of the National Environmental Policy Act of 1969.

COMMENT (6): In our most recent comment on this statement in November, 1973, we requested that the Corps of Engineers provide us with specific items of information that would greatly aid in our review of the project. To date we have not received a response to this request. We reiterate our request to the Corps of Engineers for that information in the interest of enhancing meaningful review of federal projects.

RESPONSE: The requested information, as coordinated through the Marine Resources Council, has been placed in this environmental statement.

o. PERAL RIVER BASIN DEVELOPMENT DISTRICT (page C-22)

COMMENT (1): Pursuant to your request we have solicited comments from all state agencies having any interest in the above referenced project. Included in this group were the Mississippi Board of Water Commissioners, Mississippi Forestry Commission, the Mississippi Air and Water Pollution Control Commission, Mississippi State Board of Health, the Mississippi Geological Survey, the Mississippi Game and Fish Commission, and the Pearl River Basin Development District. We herein report to you the position statement of these state agencies as to the referenced project.

COMMENT (2): No substantial issues have been raised by the aforementioned state agencies in that the potential utilization of the Mississippi Test Facility (NASA NSTL) offsets any minor drawbacks the project might present from both a practical and an environmental standpoint. The Board of Water Commissioners has submitted a written statement of review of the Draft Environmental Impact Statement which points out several technical deficiencies to which we direct your attention. This letter is attached for your inspection.

RESPONSE: These comments have been noted and appropriate changes have been made.

COMMENT (3): We realize that this statement does not address "in depth" any particular phases of this undertaking, however, we feel this adequately reflects the views of the state agencies involved. To reiterate, the consensus appears to be that the

benefits which potentially may accrue from utilization of the Mississippi Test Facility (NASA NSTL) provide sufficient justification for the project and thus no substantial adverse comments have been submitted.

- p. STATE OF MISSISSIPPI, BOARD OF WATER COMMISSIONERS (page C-24)
- COMMENT (1): Page 7, Table 1: The land area of Hancock County, Mississippi is given as 482 square miles by the 1973 edition of the Mississippi Statistical Abstract, and not 485 square miles as indicated by Table 1.

RESPONSE: This has been revised in the final statement.

COMMENT (2): Page 15, Line 8: The statement that 9,069 tons were transported along the East Pearl River in 1969 disagrees with the table on the same page

RESPONSE: This discrepancy has been corrected in the final statement.

COMMENT (3): Page 17, Line 2: The statement that only 60 percent of the labor force of Hancock County is able to find work in the county is inconsistent with figures given in Vol. 1, Part 26 of the Census of Population for 1970. The 1970 census indicates that of 5,336 workers in the county, 2,506 or 66 percent are employed in the county. Of the remaining labor force, 1,447 or 27 percent work outside the county with 383 or 7 percent not reporting their place of work.

RESPONSE: This has been revised in the final statement.

COMMENT (4): In summary, the above comments are directed only toward the content of the review material, and therefore are not intended to discredit or question the need for the project. Although the information from page 15 of the Environmental Statement indicates that waterlorne commerce along the East Pearl River has decreased rapidly since 1965's peak, the possibility of increasing the usage of the Mississippi Test Facility is adequate justification for the project.

q. STATE OF LOUISIANA, DEPARTMENT OF PUBLIC WORKS (page C-26)

COMMENT (1): We have reviewed this draft environmental statement and have no objections with respect to navigation, flood control or drainage.

COMMENT (2): Since the majority of the dredged material disposal site is located within the State of Louisiana, the method of disposal of the dredged material should not be permitted to in any way affect rights of the State of Louisiana to this state owned water bottom. It is requested that plans for disposal of dredged material be provided to the Louisiana Department of Public Works and the State Land office prior to commencement of dredging operations to insure the protection of the state owned water bottoms.

RESPONSE: The rights of the State of Louisiana will not be affected in any way by project activities. Plans for disposal of dredged material will be provided to the Louisiana Department of Public Works and the State Land office prior to the implementation of the project.

COMMENT (3): Two minor errors on page 9 of the report should be corrected. Fort Pike is not in St. Tammany Parish, but is in Orleans Parish. The statement that the Pearl River Wildlife Management Area will soon be expanded should reflect that this additional area has already been acquired by the Louisiana Wildlife and Fisheries Commission.

RESPONSE: The final statement has been revised in this respect.

r. STATE OF LOUISIAMA, OFFICE OF STATE PLANNING (page C-28)

COMMENT: If we have any pertinent comments concerning your proposal we will notify you in the near future.

s. STATE OF LOUISIANA, WILD LIFE AND FISHERIES COMMISSION (page C-29)

COMMENT (1): Of major interest to us is the location of the dredged material disposal site and the possibilities of using the dredged material in a beneficial manner. The use of dredged material for marsh building has been suggested for a number of projects in recent years, and we think that this alternative should be thoroughly explored for this project. Included with these comments is a map showing the location of existing private oyster leases in Louisiana, the spoil areas proposed by the Corps of Engineers and two alternate dredged material disposal sites that might be suitable locations for marsh building. We are not aware of any known oyster leases that would be adversely affected by the Mississippi site (site 1) but authorities in that state should be contacted concerning any such conflicts. The Louisiana site (site 2) may have added benefits in building marsh and protecting an existing railroad from erosion. The Inventory of Basic Environmental Data for South Louisiana

published by the New Orleans District Corps of Engineers indicates that each acre of marsh in the Pontchartrain-Maurepas-Borgne-Chandeleur Estuary zone supports a harvest of 109.2 lbs. of fish annually with a value of \$6.50. Recent figures released by the National Marine Fisheries Service indicate an increase in the average per capita consumption of seafood by Americans. The 1973 per capita consumption of 12.6 pounds per year is a new record.

There are a number of details which would need further study concerning building of marsh. Enclosed with this statement are a leaflet on "Vegetative Dune Stabilization in North Carolina" by C.T. Blake, W.W. Woodhouse, and E.D. Seneca of the North Carolina Agricultural Extension Service and a publication titled Vegetation, Water and Soil Characteristics of the Louisiana Coastal Region by R.H. Chabreck. We have reviewed data on salinities in the proximity of the proposed marsh building sites and believe that wire grass (Spartina patens) would be suitable for vegetating these areas. Plans for similar work at Babtiste Collette Bayou, Louisiana call for depositing dredged material to an elevation of 3 feet mean low Gulf, and this may be a suitable elevation for the proposed sites. If the Corps of Engineers thinks this suggestion merits further study, personnel of this agency would be glad to meet with you on this matter, and it may be possible to form a team of the Corps of Engineers and Louisiana Wild Life and Fisheries Commission personnel to monitor the outcome of any marsh building attempt.

RESPONSE: The costs of pumping the dredged material to the proposed Mississippi site is estimated at \$104,000, while pumping to the Louisiana site is estimated at \$184,000. On the basis of present economic benefits derived from the project, the cost of pumping to either site cannot be justified.

COMMENT (2): Another alternative that should be discussed is to postpone maintenance until there is a greater demand for use of the channel. Commercial navigation appears to be greatly reduced in the East Pearl River at the present time, and no indication of future demands for use of the project channel of benefit-cost ratio data was contained in the statement. Also relatin to the need for maintenance, what are the present channel dimensions?

RESPONSE: The latest available figures show an increase in tonnage over the previous two years and additional use of the waterway is anticipated as the National Space Technology Laboratories (NASA NSTL) are more fully used. A favorable benefit cost ratio of 1.3:1.0 has been calculated based on recent figures and has been included in the statement. The project dimensions are nine feet deep by 200 feet wide and present channel dimensions are slightly less than this.

COMMENT (3): Suggests inclusion of a description of other Corps of Engineers projects affecting the Pearl River (particularly those involving navigation).

RESPONSE: Information has been included on page 3 about other Corps of Engineers projects in the area including the Pearl River maintenance project to which you refer.

COMMENT (4): Suggests inclusion of information on the type of material to be transported, relative hazard of spills, and effects on the Pearl River itself.

RESPONSE: In 1973, tonnage transported on the East Pearl River consisted of 11,600 tons of marine shell and 75 tons of iron, steel shapes, etc. The hazard of spills is no greater than on any other waterway of this type and the effects on the Pearl River of spills of material of this nature would be minimal.

COMMENT (5): The question of salt water intrusion has been called to our attention as a possible adverse effect of this channel. The Cooperative Gulf of Mexico Estuarine Inventory and Study, Mississippi (J.Y. Christmas, et al. 1973) indicates saline marsh extending up the east side of the Pearl River. Work by Chabreck, Palmisano and Joanen (1968) indicates brackish and intermediate marsh on the west side of the river. Perhaps some clarification of this discrepancy and an explanation of any possible salt water intrusion could be included in the final EIS.

RESPONSE: The discrepancy in the descriptions of the marshes in the literature cited above has been noted, however, the definitive research needed to resolve this discrepancy is beyond the scope of this statement. Additional salt water intrusion is not expected because the channel has been in place for some time and the salinity regime has stabilized.

COMMENT (6): Since the project vicinity includes a number of oyster reefs, a program to monitor the effects of project dredging on known oyster beds might be in order. It might be appropriate to mention plantings of oyster cultch material made in Lake Borgne by the Louisiana Wild Life and Fisheries Commission during recent years.

RESPONSE: A program such as you suggest is beyond the scope of this action and it is felt that the results will not justify the additional cost. Information on the planting activities in Lake Borgne has been added.

COMMENT (7): We wish to take exception to the treatment given EPA guidelines for open-water disposal of dredged sediments (page 23). Pending review of the guidelines is not sufficient grounds to imply that they should not be followed. Review may result in proposals for modifications that are either more stringent or more relaxed, and no action should be taken predicated upon a future decision to relax the criteria for open water disposal. It is suggested that samples be taken from the project channel. If the high oil, grease and mercury content in samples in the GIWW resulted from pollution by users of the waterway, the less heavily used project channel might meet present requirements.

RESPONSE: The EPA guidelines to which you refer are very seldom met in areas along the Gulf coast and the natural levels for several parameters are often above the guideline values. Additional data on the chemical quality of dredged sediments will be available before implementation of the project as a result of a study undertaken by the Mobile District.

COMMENT (8): There are several minor changes which would improve and update the EIS. The Pearl River Wildlife Management Area was expanded by 9,952 acres on December 18, 1973 (page 9).

RESPONSE: This is included in the final statement.

COMMENT (9): Mention of the status of various streams in the project area as Louisiana Natural and Scenic Rivers would be appreciated.

RESPONSE: This has been included in the revised statement.

COMMENT (10): We question the occurrence of any significant use of the channel in Lake Borgne by waterskiers and suggest that mention of waterskiers be deleted (page 26).

RESPONSE: This has been deleted in the final statement.

COMMENT (11): The EIS should be corrected to state that the American Alligator is on the Department of Interior's Rare and Endangered Species List since this species is neither rare or endangered in Louisiana at this time. The Southern Bald Eagle which is also on the list and the Osprey which is of undetermined status may be visitors to the area.

COMMENT (12): The significane of the freshwater fishery in the project area should be recognized.

RESPONSE: Additional available information has been added to the statement.

t. M.D. KOSTMAYER (page C-34)

COMMENT (1): Nowhere is there any reference to salt water intrusion in the Pearl River Delta which has drastically changed the ecology and the entire region.

RESPONSE: The Pearl River entrance channel is an existing channel and its maintenance is not expected to change the current salinity regime.

COMMENT (2): Nowhere is there any reference to the fact that there are actually three navigable channels into East Pearl River, one being the West Mouth of the West Pearl River, the second being the channel recently constructed through Little Lake and the third being the channel at the mouth of the East Pearl River. It would certainly seem that three channels are unnecessary and simply provide for continued salt water intrusion.

RESPONSE: Use of either of the other channels mentioned would increase the transportation distance for commercial use of the East Pearl. Discussion of effects of the West Pearl and Little Lake channels is beyond the scope of this statement. The fact that there are three separate channels in the area would indeed increase the likelihood of greater salt water intrusion.

u. SIERRA CLUB, DELTA CHAPTER (page C-35)

comment (1): The Council on Environmental Quality has prepared and published Guidelines for Preparation of Environmental Impact Statements. The revised statement does not comply with the CEQ guidelines in the following respects: The agency did not use the environmental impact statement process to explore alternative actions that will avoid, or minimize adverse impacts. 40 CFR \$1500.2(b). All that has been done is to list a few of the possible alternatives and certain conclusions regarding them. There is no detailed discussion whatsoever of the cost-benefit analysis on the proposed project.

RESPONSE: As indicated in the final statement, the proposed project has been altered to include implementation of alternative D as a result of comments received on the draft statement. In addition, the section on alternatives has been expanded and the benefit cost analysis has been included in the statement.

COMMENT (2): The revised statement does not disclose sufficient detail to serve as the means for assessing the proposed action. 40 CFR \$1500.7(a). It fails to provide a detailed discussion of all possible alternatives, even those which may not be within the statutory power of the agency. It clearly attempts to be an apologia, and a poor one at that, for a decision already finalized.

RESPONSE: The discussion of alternatives has been expanded in the final statement to present a clearer view of the adverse and beneficial aspects of each. As mentioned in the response to Comment 1 above, the plan presented as alternative D in the revised draft will be implemented for the disposal of dredged materials. The merits of this plan were pointed out by several agencies during the review process and it is believed that adverse effects resulting from the proposed action will be minimized.

COMMENT (3): The agency has not stated the interrelationships and cumulative environmental impacts of the proposed action and other related Federal projects. 40 CFR \$1500.8(a)(1). One other project exists in the Pearl River Basin--maintenance dredging of the West Pearl River. The Mobile District offices prepared an EIS on that project and released it in May 1973. Portions of the Pearl River have locks on them and these locks are operated and maintained by the Mobile District, Corps of Engineers. At no point are they mentioned in the revised statement. Therefore, it appears that those dark lines above and below the comment in the revised statement that "there are no other Federal actions which, in connection with this project would constitute a cumulatively significant impact on the environment" are what I suspected--cut and paste marks!

RESPONSE: A separate environmental impact statement on the West Pearl River has been completed. The fact that there are locks operated by the Mobile District on the Pearl River has little bearing on maintenance of the East Pearl River entrance channel and should not account for any adverse effects. The possibility of a resultant cumulative impact from these two projects is mentioned in the revised statement.

COMMENT (4): The revised statement does not contain a rigorous and objective evaluation of the environmental impacts of all resonable alternatives, particularly those that might enhance environmental qualities or avoid some or all of the adverse environmental effects. 40 CFR \$1500.8(a)(4).

RESPONSE: Additional information has been added to the discussion of alternatives.

COMMENT (5): The revised statement does not provide for alternative measures to provide for compensation of fish and wild-life losses, including the acquisition of land, waters, and interests therein. 40 CFR \$1500.8(a)(4).

RESPONSE: Any losses of fish or wildlife as a result of this project will be very minimal and the necessity and feasibility of compensation for such small losses is doubtful. The possibility of using the dredging material for marsh building has been investigated.

COMMENT (6): There is no cost-benefit analysis or summary thereof attached to the revised statement. 40 CFR \$1500.8(a)(8).

RESPONSE: This information has been added to the statement on page 3.

COMMENT (7): The revised statement does not indicate in the text all underlying studies and other information considered nor its source. It does not indicate the benefit-cost analysis prepared by consulting agencies under the Fish and Wildlife Coordination Act and the National Historic Preservation Act, nor the specific input of the consulting agencies. 40 CFR \$1500.8(b). Merely stating that comments were obtained and considered is insufficient. The revised statement should have clearly indicated that there has not been any comprehensive archeological study of the Pearl River Basin, and therefore, the statement that there are no archeological sites located adjacent to the proposed project is grossly misleading.

RESPONSE: A bibliography including all sources consulted has been attached and a benefit-cost analysis has been incorporated in the final statement. In addition, correspondence from the Mississippi Historic Preservation Officer has been placed in the appendix and the text has been changed to reflect the possibility of undiscovered archeological sites.

COMMENT (8): As a result of the above stated insufficiencies in the revised statement, I urge that you redo the entire thing.

RESPONSE: Additional information has been added to the revised statement and it is believed that the final statement adequately discusses the environmental impact of maintenance dredging of the East Pearl River.

v. MICHAEL L. CRAGO (page C-38)

COMMENT (1): The Mississippi Test Facility (NASA NSTL), as you noted in the draft statement, is being phased down. A discussion

of the future plans for this facility should be included in the statement. The facility is the main reason for the proposed project.

RESPONSE: As noted in the final statement, the Mississippi Test Facility, now known as the NASA NSTL, is not undergoing any further phase reductions. Its mission has changed and its importance as a multi-agency research center is growing. Approximately 20 federal and state agencies and university organizations were located at the facility in 1974.

COMMENT (2): You presented a discussion on waterborne commerce for the East Pearl River in the draft statement. I believe you should also discuss the motor freight and rail freight industries of the area. Tonnage figures for motor and rail freight should be added to the statement. An increase in waterborne commerce could mean a decrease in rail and motor freight and therefore an economic loss to these carriers.

RESPONSE: Waterborne commerce tonnage figures were presented to give an indication of how much and what type of material were being transported through the entrance channel and on the East Pearl River. Tonnage figures for motor and rail freight are not available and it is not felt that the projected tonnages of these types of materials would cause any significant decrease in motor or rail freight in the project area.

COMMENT (3): Section 1500.8 of CEQ Guidelines for Preparation of Environmental Impact Statements as appearing in the August 1, 1973 Federal Registry, VOL. 380147 provides that "...agencies that prepare cost-benefit analyses for proposed actions should attach such analyses, or summaries thereof, to the environmental impact statement, and should clearly indicate the extent to which environmental costs have not been reflected in such analyses."

RESPONSE: This information has been added to the statement on page 3.

COMMENT (4): The dredging will open up the East Pearl River area and result in the destruction of wildlife habitat with negative results for the displaced wildlife.

RESPONSE: The dredging is maintenance dredging of an existing channel and no new areas will be affected.

<u>COMMENT (5)</u>: A list of the species of mammals, reptiles and amphibians that inhabit the marsh and surrounding area of the East Pearl would be helpful.

RESPONSE: A list such as you suggest has been included in the revised statement.

COMMENT (6): It would be helpful to list the species referred to in "the marshes surrounding the area are important for many species of shorebirds and for geese and ducks." Special attention should be made of the raptors found in the area.

<u>RESPONSE</u>: The marshes are not expected to be affected and a discussion of the species inhabiting these areas is felt to be extraneous.

COMMENT (7): You presented in the draft statement a chemical analysis of the water from the Gulf Intracoastal Waterway at Mile 40.1. This area is about two miles from the start of the project and, in addition, the analysis was taken over three years ago. Many chemical changes can occur in the water within three years. I believe a current analysis should be taken within the project area. It is difficult for anyone to formulate a correct conclusion with outdated information.

RESPONSE: A study currently in progress will yield information on water quality of sediments to be dredged in the district. The information will be available before the project is implemented.

COMMENT (8): If the project is approved care must be taken to avoid altering water currents or hydrological conditions. This could harm the oyster production in Heron Bay.

RESPONSE: The project has been changed to include an opening in the center of the disposal area. This alternative was chosen to mitigate the effects on the area's current patterns.

COMMENT (9): On page 17 of the draft statement you said, "of the labor force that is within Hancock County, only 60 percent is able to obtain work within the county,..." What year was the figure of 60 percent calculated?

RESPONSE: This error has been corrected as the result of a similar comment and 1970 Census information has been used.

COMMENT (10): It should be noted in the draft statement that many people in St. Tammany Parish and Hancock County live in these areas to get away from city problems such as noise, crowds, pollution and crime. Many citizens commute daily to New Orleans to their jobs and look forward to returning to the quiet life of the country. Economic expansion could be a reason for people leaving the city. Are the people who commute complaining about it? Many citizens of New Orleans own homes in St. Tammany Parish and Hancock County and use these homes only on weekends or for the summer. Their main reason is to get away from the hectic life of the city.

RESPONSE: This environmental impact statement deals with maintenance of the existing channel at the mouth of the Fearl River. No new action is included. The project is intended to maintain the status quo and is not expected to result in economic expansion of the magnitude you suggest.

Appendix A

BIBLIOGRAPHY FOR EAST PEARL RIVER ENVIRONMENTAL STATEMENT

BIBLIOGRAPHY FOR EAST PEARL RIVER ENVIRONMENTAL IMPACT STATEMENT

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Appendix B

LETTERS OF COORDINATION ON DRAFT ENVIRONMENTAL STATEMENT

ENVIRONMENTAL PROTECTION AGENCY

REGION IV

1421 Peachtree St., N.E., Atlanta, Georgia 30309

APR 23 1973

Mr. J.J. Danaher Chief, Engineering Division Mobile District, Corps of Engineers P.O. Box 2288 Mobile, Alabama 36628

Dear Mr. Danaher:

We have reviewed the Draft Environmental Impact Statement for East Pearl River, Mississippi (maintenance dredging) and find that it sets forth the environmental impact of the proposed project, as well as alternatives reasonably available to the project. We do, however, have reservations concerning the environmental effects of certain aspects of the project and recommend further study of suggested alternatives and re-assessment of these aspects.

Specifically, it is suggested that instead of making the spoil area continuous. consideration be given to leaving a large opening in the center of the area at least 1,000 feet wide so that offshore currents parallel with the shore will not be obstructed and better circulation of the adjacent shallow water areas will be provided. This could be considered as an alternate in Chapter 5, page 25.

USCG charts of the proposed spoil area show the water depth to vary from about four feet at the northern end of the spoil area to about ten feet at the southern end. Continuous spoiling at the northern end over a period of years will therefore form a spoil island while the southern end will probably remain submerged. The spoil pile as shown is better than one and one-half miles long and will therefore deflect or partially block offshore currents parallel with the shore. By providing an opening in the center of the spoil area at least one-thousand feet wide down to the Bay bottom, much better circulation could be provided.

Finally, it is recommended that the Statement indicate parameters of dredged spoil elements which are detrimental to water quality.

We would appreciate receiving five copies of the Final Environmental Statement when it is available. If we can be of further assistance please let us know.

Sincerely,

Jack E. Ravan Regional Administrator



United States Department of the Interior

OFFICE OF THE SECRETARY

Southeast Region / 148 Cain St., N.E. / Atlanta, Ga. 30303

April 16, 1973

ER-73/306

Mr. J. J. Danaher, Chief Engineering Division U.S. Army Corps of Engineers Post Office Box 2288 Mobile, Alabama 36628

Dear Mr. Danaher:

Reference is made to your letter dated March 2, 1973, to the Assistant Secretary - Program Policy requesting the Department's comments concerning the draft environmental statement for the East Pearl River, Mississippi (Maintenance Dredging). We have reviewed the draft statement for project effects on national park areas and landmarks, outdoor recreation, mineral rescurces, hydrology, geology, and fish and wildlife resources.

We offer the following comments for your consideration:

Environmental Setting of the Project

This proposed action will not adversely affect any existing, proposed, or known potential units of the National Park System, or any known historic, natural, or environmental education sites eligible or considered potentially eligible for the National Landmark Programs.

It is indicated on page 4 of the draft statement that there are no known historical sites, buildings, trees, or archaeological sites that will be affected by the proposed project. There is also an appendix to the statement that lists the historical sites within the study area. It would be helpful if the sites listed were identified as to there relative location to the proposed project.

We suggest that the National Register of Historic Places be consulted for any site that will be directly or indirectly affected by the proposed project and that (1) a sentence indicating that the Register of Historic Places has been consulted with the "Criteria of Effect" applied, and that no National Register properties will be affected by the project, or (2) a listing of the National Register properties to be affected, an analysis of the nature of the effects, a discussion of the ways in which the effects were taken into account, and an account of steps taken to assure compliance with section 106 of the National Historic Preservation Act. This Act applies only to the historic sites listed on the National Register of Historic Places. This list may be found in the Federal Register dated February 28, 1975.

We also suggest the statement contain evidence of contact with the Historic Preservation Officer for the State of Mississippi (Dr. P. A. McLemore, Director, Department of Archives and History, State of Mississippi, Box 571, Jackson, Mississippi 39205). A copy of his comments concerning the effect of the undertaking upon any historical or archaeological resources which may be in the process of nomination to the National Register of Historic Places should be included.

Environmental Impact of the Proposed Actions

We suggest more attention be given to the adverse environmental impact of spoil disposal and increased turbidity. Depositing spoil in shallow water will cause increased turbidity and will destroy most benthic organisms at and around the spoil site. These organisms are an important food for many other members of the biological community. The food production that now occurs at the spoil disposal site will be destroyed until the area is repopulated. The total number of acres to be used for spoiling should be given in the statement as well as a discussion on the environmental impact of shallow water spoil disposal.

Adverse Environmental Effects Which Cannot be Avoided Should Proposal Be Implemented

We suggest this section be expanded to clearly show that benthic organisms will be lost from the channel to be dredged as well as the spoil sites.

Thank you for the opportunity to review and comment on the draft statement.

Sincerely yours,

er in this

(Miss) June Whelan Field Representative to the Secretary Southeast Region

THE ASSISTANT SECRETARY OF COMMERCE Washington, D.C. 20230

April 2, 1973

Mr. J. J. Danaher Chief, Engineering Division Mobile District, Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Dear Mr. Danaher:

The draft environmental impact statement for East Pearl River, Mississippi (Maintenance Dredging), which accompanied your letter of March 2, 1973, has been received by the Department of Commerce for review and comment.

The Department of Commerce has reviewed the draft environmental statement and has the following comment to offer for your consideration.

If project operations are carried out as planned, we anticipate that adverse effects on aquatic resources should be minimal and temporary.

We hope this comment will be of assistance to you in the preparation of the final statement.

Sincerely,

Sidney R. Galler

Deputy Assistant Secretary for Environmental Affairs

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

P. O. Box 610, Jackson, Mississippi 39205

April 4, 1973

Colonel Harry A. Griffith, District Engineer Department of the Army Mobile District, Corps of Engineers P: O. Box 2288 Mobile, Alabama 36628

Dear Colonel Griffith:

We have reviewed the draft environmental statement on East Pearl River (Maintenance and Dredging) in Hancock County, Mississippi.

We understand the project is to maintain navigation channels at the mouth of East Pearl River and consists of a channel nine feet deep, 200 feet wide and at a point about 1.3 miles long. This is part of a periodic maintenance program to facilitate the use of commercial vessels in the lower reaches of the Pearl River system.

We have no comments to make on the draft environmental statement. We appreciate the opportunity to review and comment on this proposed project.

Sincerely,

W. L. Heard

State Conservationist

71. P. Filian



Federal-State Programs
Office of the Governor
510 Lamar Life Bldg.
Jackson, Mississippi 39201
Telephone 354-7570

State Clearinghouse No.

73030507

Date: April 24, 1973

TO: Mr. J. J. Danaher, Chief
Engineering Division
Mobile District, Corps of Engineers
Department of the Army
Post Office Box 2288
Mobile, Alabama 36628

PROJECT DESCRIPTION: Draft Environmental Statement, East Pearl River, Mississippi (Maintenance Dredging)

- (x) 1. The State Clearinghouse has received notification of intent to apply for Federal assistance as described above.
- (--) 2. The State Clearinghouse has reviewed the application(s) for Federal assistance described above.
- (--) 3. After proper notification, no State agency has expressed an interest in conferring with the applicant(s) or commenting on the proposed project.
- (--) 4. The proposed project is () consistent () inconsistent with an applicable State Plan for Mississippi.
- (x) 5. Although there is no applicable State Plan for Mississippi, the proposed project appears to be (x) consistent () inconsistent with present State goals and policies.

COMMENTS: The summary review of State agency comments by the Board of Water Commissioners is attached and made a part of this clearinghouse action along with copies of all responding State agencies. The dredging is determined to be needed. The draft statement needs to be corrected to include Item 1 and 2 of the summary review. Before dredging begins Items 3 and 4 should be considered and also included in the revision of the Draft Statement.

This notice constitutes FINAL STATE CLEARINGHOUSE REVIEW AND COMMENT. The requirements of U. S. Office of Management and Budget Circular No. A-95 have been met at the State level.

cc: Southern Miss. P & DD
Gulf Regional Planning Com.
Board of Water Commissioners
Miss. Marine Resources Council

B-8



BOARD OF WATER COMMISSIONERS

JACKSON, MISSISSIPPI 39201

354-7236

April 23, 1973

Colonel Harry A. Griffith, District Engineer U. S. Corps of Engineers, Mobile District Post Office Box 2288 Mobile, Alabama

Subject: Draft Environmental Statement, East Pearl River,

Mississippi (Maintenance Dredging)

Dear Colonel Griffith:

The above referenced draft statement has received review by appropriate agencies of the State of Mississippi, and copies of individual letters of response are enclosed for your record. The Mississippi Marine Resources Council (MMRC) makes comments which may be helpful in revising this draft statement.

A summary of points brought out by review participants meriting consideration follows:

- The information concerning the salt domes near Kiln, included in Appendix A, have been determined erroneous by review participants.
- MMRC states that the discussion concerning oyster reef location is inaccurate. (See MMRC letter, page 2, para. 4.)
- Consideration of spoil disposal west of the channel and its environmental effects in relation to the proposed action, in the opinion of review participants, is needed.









Colonel Harry A. Griffith Mobile, Alabama 4/23/73

4. Since currents associated with the project area determine, somewhat, the extent of environmental consequences, background information of these current patterns and their corresponding environmental effect need discussion.

The overall consensus is that the project is needed, but that several environmental considerations should be introduced or clarified.

Yours very truly,

MISSISSIPPI BOARD OF WATER COMMISSIONERS

Jack W. Pepper, Water Engineer

JWP:mm Encls.



BOARD OF WATER COMMISSIONERS

416 NORTH STATE STREET JACKSON, MISSISSIPPI 39201

354-7236

April 20, 1973

INTEROFFICE MEMORANDUM

TO:

James I. Palmer, Jr.

FROM:

Phil Jones

SUBJECT:

Draft Environmental Statement, East Pearl River,

Mississippi (Maintenance Dredging)

In general, the draft statement appears to have adequately discussed most of the environmental effects of the proposed action. My more specific comments follow.

No where does the statement discuss current directions and sediment transport into and within the Gulf, thus indicating sediment 'deposition. Consideration should be given to flow velocities in regard to both magnitude and direction of sediment giving supporting or non-supporting background information as to the placing of the spoils to the east or to the west of the channel. Therefore, consideration of Gulf currents and movement of material build-up should be included in the statement.

I also would like to point out that hydraulic dredging was even said to be less environmentally detrimental than conventional dredging.

Respectfully submitted,

Ph	il	Jones	

PJ:mm









Air & Water Pollution Control Commission

STATE OF MISSISSIPPI

Glen Wood, Jr.

POST OFFICE BOX 827 TELEPHONE 354-6783
SIXTH FLOOR ROBERT E. LEE BUILDING

JACKSON, MISSISSIPPI 39205

COMMISSIONERS

GAME & FISH COMMISSION AVERY WOOD

BOARD OF WATER
COMMISSIONERS
JACK PEPPER

CHARLES W. ELSE

ASSOCIATE MEMBERS STATE PARK SYSTEM OR. JOHN M. KING A & I BOARD

GEOLOGICAL SURVEY

March 15, 1973

COMMISSIONERS

OIL & GAS BOARD

QUINCY R. HODGES

BOARD OF HEALTH

MARINE CONSERVATION

JOE D. BROWN

COMMISSION

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JAMES W. CARRAWAY, CHAIRMAN

Board of Water Commissioners 416 North State Street Jackson, Mississippi 39201

RE: Draft Environmental Statement,

East Pearl River, Mississippi (Maintenance Dredging)

Attention: Mr. James I. Palmer, Jr.

Director of Resource Planning

Gentlemen:

Review of the subject statement is complete and we forward the following comment.

We are not at all certain, from the documents received, of the positive location of the spoil bank shown and proposed. Doubt exists as to where Louisiana stops and Mississippi begins, consequently, water quality location and responsibility is not clearly defined.

Whatever the jurisdiction, it appears somewhat extreme that approximately thirty acres of channel should be allowed to generate some four hundred fifty acres of spoil bank.

It is recognized that direct and long range degradation of water quality under the proposed conditions could be considered minimal but a two and one half year benefit before repeating the operation could also be looked upon as minimal from an economic and effectiveness point of view.

It is our considered judgement that restoration and environmental

Continued from Page One

enchancement of the waters of the Mississippi Sound and current dredging practices are fundamentally incompatible and especially so relative to conventional spoil disposal. We therefore strongly recommend any and all consideration possible in effecting a more acceptable means of accomplishing essential dredging.

The opportunity for review and comment is appreciated.

Very truly yours,

Journa Hingles
Tommy Gingles

Assistant Executive Director

TG:jn

cc: Coordinator of Federal-State Programs

Attention: Mr. E.A. May, Jr.



William L. Waller Governor

James B. Rucker PHD Executive Director

Mississippi Marine Resources Council

Post Office Box 497 Long Beach, Mississippi 39560 601-864-4602 April 16, 1973

Mr. James I. Palmer, Jr. Director of Resource Planning Board of Water Commissioners 416 North State Street Jackson, Mississippi 39201

Dear Mr. Palmer:

The Mississippi Marine Resources Council (MMRC) has coordinated a review of the Draft Environmental Statement, East Pearl River, Mississippi (maintenance dredging) prepared for the U. S. Army Corps of Engineers by Gulf South Research Institute. This review was conducted at the request of the State of Mississippi Board of Water Commissioners for inclusion in the consolidated statement to be returned to the Corps of Engineers. This review is based on comments from the Director of the Gulf Coast Research Laboratory and members of his staff serving on the Environmental Affairs Committee, the State Biologist for the Marine Conservation Commission, and the Director of Gulf Regional Planning Commission. The staff of MMRC has also studied the report and formulated the critique and some of the recommendations presented in this review.

The Mississippi Marine Resources Council and other participants of this review recognize the importance of this project in maintaining the lower reaches of the Pearl River at its confluence with Lake Borgne, for navigational purposes. Although we generally endorse the purpose which will be served by the proposed maintenance dredging, we feel obligated to comment on certain aspects of the project and the content of the Draft Environmental Statement.

Most of section 2 - Environmental Setting of the Project - beginning on page three (3) of the Draft Environmental Statement, is a lengthy description of general aspects of the western part of the Mississippi Gulf Coast Region. Although these sub-regional observations may have some indirect significance to East Pearl River, the data presented are scarcely related to the proposed project. On page four (4) of the Statement, historical and archaeological sites are discussed with a listing presented in Appendix A. Most of the historical sites listed are generally far removed from the proposed project, and the list appears rather sparse considering the area represented by the distribution of those sites listed. Also, archaeological sites are credited to the study area, but none are described or listed.

Mr. James I. Palmer, Jr. Page 2 April 16, 1973

In appendix A a postulated saltdome, described as the second largest in the U.S., is attributed to an area north of the town of Kiln. This same erroneous information was also included in a recent Draft Environmental Statement on Pass Christian Harbor; and was appropriately addressed in a written statement submitted by the Mississippi Geological Survey to the Coordinator of Federal-State Programs. Unfortunately this erroneous statement is unrelated to the proposed project and can only serve to cloud the credibility of other information presented in the Draft Environmental Statement.

Analysis of sediments in the immediate vicinity of the East Pearl River entrance channel is presented on page seventeen (17) of the Statement. However, the significance of these data in regard to the proposed project is not discussed. This omission seems incongruous in as much as spoiling and water turbidity seem to be points of main concern in other discussions within the Draft Statement.

The problems of turbidity are discussed on pages twenty (20) and twenty two (22). On page 20 it is stated that the shoreline estuary area may be temporarily degraded by deposition of silt; and on page 22 it is stated that turbidity levels will be raised over a limited, but not precisely forecast, area around the discharge which may extend for more than 1,000 feet in various weather conditions. However, nowhere in the report are current directions or their effects on spoil disposal and dispersion of sediments discussed. This may be a critical factor regarding shell fishing areas near the proposed project.

It is stated on page twenty four (24) of the Drait Statement that there are no known oyster reefs within 10 miles of the study area. This statement demonstrates a lack of communication with the Mississippi Marine Conservation Commission which has the responsibility of managing oyster beds in Mississippi's coastal waters. The State Biologist states that shells have been planted, and a new oyster reef has been started east of the proposed project, between the spoil area and Heron Bay. These new beds are approximately one-half to one mile from the northern end of the spoil disposal area. The effects that spoiling associated with the maintenance dredging may have on these new beds is largely dependent on the current regime in the area.

The participants of this review recognize that the proposed project creates a conflict for the use of public owned water bottoms in the East Pearl River area. In order to resolve this conflict we recommend that additional data be obtained and analyzed in order to arrive at more accurate and specific environmental impact predictions. Predictions regarding siltation in the shell bed area east of the proposed dredge spoil site should be based largely on sediment analysis and current patterns.

Mr. James I. Palmer, Jr. Page 3 April 16, 1973

It is recommended that the Mississippi Marine Conservation Commission be consulted regarding the exact location and present status of the new oyster beds referred to in this review.

Various alternatives for dredge spoil disposal were considered in the Draft Environmental Statement and disregarded as either environmentally detrimental or uneconomical. However, a designated spoil area bordering the western side of the East Pearl River channel was not discussed. We recommend that this area be considered as an alternate dredge spoil site for the proposed project.

Please advise us of any action the Corps of Engineers may take regarding our comments and recommendations.

Sincerely

James B. Rucker

Director

RES:gb

cc: Gulf Coast Research Laboratory
Marine Conservation Commission
Gulf Regional Planning Commission
Air and Water Pollution Control Commission
Federal State Programs

SULF REGIONAL PLANNING COMMISSION

SERVING PEARL RIVER. HANCOCK, HARRISON AND JACKSON COUNTIES OF MISSISSIPPI

POST OFFICE BOX 1045 GULFPORT, MISSISSIPPI 39801

TELEPHONE (601) 864-1167

April 5, 1973

Mr. James I. Palmer, Jr. Director of Resource Planning Board of Water Commissioners 416 North State Street Jackson, Mississippi 39201

Dear Mr. Palmer:

Subject: Metropolitan Clearinghouse Review #27-73
Draft Environmental Statement, East Pearl River
Maintenance Dredging

We have reviewed the Draft Environmental Statement in support of proposed maintenance dredging of the mouth of the East Pearl River in Hancock County, Mississippi. separate response to a request for comment received from the Department of Housing and Urban Development, we made the observation that we generally concurred with the findings of the draft statement, although there is reference to a salt dome at Kiln which is apparently unknown to appropriate State agencies (and, in any event, is scarcely related to the proposed project). We observed also that, in earlier conversations with personnel of the Marine Conservation Commission and the Gulf Coast Research Laboratory, there presently appear to be no commercially productive oyster reefs within the immediate vicinity of the dredging operation. We anticipate that this matter will be further discussed in a response from the Marine Conservation Commission.

This Commission concurs that properly controlled deposition of spoil as proposed is preferable to deposit on shore, which would result in positive degradation of existing marsh lands.

This Commission will concur in findings of the Mississippi Air and Water Pollution Control Commission concerning effects of the dredging operation upon quality of adjacent waters. This Commission also recognizes economic benefits accruing to Hancock County and the Mississippi Gulf Coast from maintenance of the channel, and therefore supports the proposal within the context of the foregoing comments.

Sincerely,

Jack Different
Executive Director

JD/ccp

cc: Mr. William Demoran, GCRL

Dr. James Rucker, Ms. Marine Resources Council

Mississippi State Highway Department Jackson

E. L. BOTELER, JR

March 14, 1973

P.O. Box 1850 Zip Code 39205

Mr. James I. Palmer, Jr.
Director of Resource Planning
Mississippi Board of Water Commissioners
416 North State Street
Jackson, Mississippi 39201

Dear Mr. Palmer:

SUBJECT: Review of Draft Environmental Statement, East Pearl River, Miss. (Maintenance Dredging)

A preliminary review of the Draft Environmental Statement has disclosed no effects on the quality of the human or natural environment within the area of jurisdiction of the Mississippi State Highway Department.

Thank you for the opportunity to participate in this review.

Sincerely,

E. L. Boteler Director

b. 1. bacere

ELB/JMW/jrh



HUGH B COTTRELL, M.D., M.P.H.

MISSISSIPPI STATE BOARD OF HEALTH

JACKSON, MISSISSIPPI 39205

March 16, 1973

Mississippi Board of Water Commissioners 416 North State Street Jackson, Mississippi 39201

Attention: Mr. James I. Palmer, Jr.

Gentlemen:

Re: Draft Environmental Statement East Pearl River, Mississippi (Maintenance Dredging)

This is to advise you that I have reviewed the abovereferenced Corps of Engineers Environmental Statement.

I find nowhere in the report where the Corps has analyzed the possible damage to the scattered oyster growths in the spoil area. Possibly the Marine Conservation Commission will comment further on this.

Very truly yours,

J. D. Brown, P. E., Director

Sanitary Engineering

JDB/mb



J. BURTON ANGELLE

NEW ORLEANS 70130

GOVERNOR

July 10, 1973

Colonel Harry A. Griffith District Engineer, Mobile District United States Army Corps of Engineers P.O. Box 2288 Mobile, Alabama 36628

Dear Colonel Griffith:

Personnel of the Louisiana Wild Life and Fisheries Commission have reviewed the <u>Draft Environmental Statement for East Pearl River</u>, Mississippi (Maintenance Dredging), and we have the following comments:

First, we would like to question the naming of the project as <u>Pearl River, Mississippi</u> and the statement on page 3 that the project
". . . has no direct effect on Louisiana. . . . " The boundary between Louisiana and Mississippi follows the center line of the Pearl River to its mouth and thence in an easterly direction. If the map on page 21 (Figure IV) is correct, nearly the entire channel to be maintained and a large portion of the spoil area are located on Louisiana owned water bottoms. Furthermore, part of this area is designated as public oyster grounds. The entire draft statement should be revised to reflect the interest of Louisiana in the effects of this project and the project area.

Colonel Harry A. Griffith Page 2 July 10, 1973

Figures on sport fishing in the Gulf (Page 10) should be revised according to the 1970 Survey of Fishing and Hunting published by the Bureau of Sport Fisheries and Wildlife, United States Department of the Interior. It may also be appropriate to present figures on the value of such sport fishing as given in the aforementioned publication. The National Marine Fisheries Service should be consulted concerning commercial fishery landings from the general project area. It may be possible to arrive at a more appropriate figure than the entire Mississippi landings.

The implication that there will be no harmful effects on fish and shellfish from dredging operation (page 24) is in conflict with statements (page 25) that benthic organisms may be buried and killed by spoil deposition. A more complete explanation concerning the species and numbers of organisms damaged by spoil deposition may be in order.

The comments about flood and drainage characteristics on page 23 raise several questions concerning the effects of this project on flood stages in the lower Pearl River. Will this project lower flood stages in the lower reaches of the Pearl River? Will the extent of out of bank flooding be reduced both in area and duration? Any project induced changes in the current pattern of water fluctuations could have significant effects on the productivity of the swamps and marshes along the lower Pearl River, and any such changes should be dealt with extensively in the environmental statement.

Some attention should be given to the effect of the river traffic afforded by this project on the Pearl River itself. Also of interest would be the type of material to be transported and the relative hazard of spills, etc., involved.

The Louisiana Wild Life and Fisheries Commission thanks you for the opportunity to comment on this project and hope that these comments will be of help in preparing a revised statement.

Sincerely yours,

J. Burton Angelle

Director

JBA:MW/ibm



National Wildlife Federation

1412 16TH ST., N.W., WASHINGTON, D.C. 20036

Phone: 202-483-1550

Southeastern Regional Office 110 So. McDonough Street Montgomery, Alabama 36104

Telephone: 205/263-3342

March 29, 1973

Mobile District U.S. Army Corps of Engineers P.O. Box 2288 Mobile, Alabama

ATTENTION: Environmental Quality Section

Gentlemen: -

In reference to the copy of the Draft Environmental Statement, East Pearl River, Mississippi (Maintenance Dredging), we are concerned with the effect of the dredging upon fish and shellfish habitat. It seems to us that if the channel is dredged every 2.5 years, the fish and shellfish habitat will not have sufficient time to recover before it will be destroyed by another dredging.

Another real concern is the <u>Material</u> <u>Disposal</u>, Item n., page 25. Depositing the spoil material in the immediate area of open water will further endanger fish and shellfish habitat, and will refill the channel in a short period of time.

We would strongly recommend that disposal of the spoil matter be made on the highest and driest available land.

We appreciate the opportunity to make these comments.

Yours very truly,

F.H. Farrar

Southeastern Executive Director

FHF: jw

cc: Mr. Thomas L. Kimball
Executive Vice President
National Wildlife Federation
Mr. Charles Kelley, NWF Regional
Director

Mr. Paul Ott Carruth, President Mississippi Wildlife Federation



M. D. KOSTMAYER, INC.

Agent

UNITED STATES FIDELITY AND GUARANTY COMPANY

700 United Fruit Building

Telephone: 525-6151

NEW ORLEANS, LOUISIANA 70130

March 30, 1973

Mr. J. J. Danaher, Chief, Environmental Quality Section Dept. of the Army Mobile District Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Re: SAMEN-EE

Dear Mr. Danaher:

For the record, I would like to comment on the proposed maintenance dredging at the mouth of East Pearl River.

In the draft Environmental Statement which I have received, I can find no reference to salt water intrusion due to channelization. Because of increased salinity we are witnessing accelerated degeneration of the marshes in this Pearl River Delta. Biologists on the Staff of the Louisiana Wildlife and Fisheries Commission advise that this is due to the salinity referred to above. I do note, however, that your proposal refers to the services of the Mississippi Test Facility.

Some years ago, an additional channel for the specific benefit of the Mississippi Test Facility was dredged from East Pearl River through Little Lake into the Rigolets.

Why are two channels necessary? Particularly in view of almost negligible marine traffic to and from the Test site.



M. D. KOSTMAYER, INC.

Agent

UNITED STATES FIDELITY AND GUARANTY COMPANY

700 United Fruit Building

Telephone: 525-6151

NEW ORLEANS, LOUISIANA 70130

-2-

Shortly after the Little Lake Channel was completed a change in marsh vegetation and the erosion became apparent to property owners and those of us who have for many years leased these lands for recreational purposes. Unless this trend is stopped, several of the large islands will in a few years disappear and seas from Lake Borne and the Rigolets will be lapping the right-of-way at U. S. 90.

It is suggested that the channel at East Pearl River together with the channel at the West mouth at West Pearl River could satisfy all needs for marine use and that the channel through Little Lake not only be abandoned, but that its entrance to the Rigolets be closed permanently.

This would stop a substantial amount of salt water intrusion, eliminate dangerous cross currents to marine traffic at the L & N Draw Bridge and go a long way toward restoring the delicate balance needed to preserve this Delta Marsh. I do not understand how Gulf South Research Institution could have prepared its report and be so oblivious to the general conditions that are herein referred to.

Yours very truly

M. D. Kostmayer



SIERRA CLUB, DELTA CHAPTER

208 West Ardenwood Drive Baton Rouge, Louisiana 70806

June 23, 1976

re: DRAFT ENVIRONMENTAL IMPACT STATEMENTS

- 1. East Pearl River, Miss. (Maintenance Dredging) February, 1973
 - Pearl River, Mississippi & Louisiana (Maintenance) May, 1973

Gentlemen:

I only recently learned about the existence of these two draft environmental impact statements (EIS). I would like for these comments to be made a part of your official records for purposes of developing the final EISs. In the event that the delays for commenting have expired I would like for a waiver to be granted and my comments allowed in view of the fact that I was not sent notices of these projects by your agency (even though earlier this year I asked to be put on your mailing list and have received a few notices), and therefore only learned about these projects quite recently.

I find it amazing to see in both drafts the statement that "(a)t the present time, there are no other Federal actions which, in connection with this project, would constitute a cumulatively significant impact on the environment." The maps attached to each draft show the close proximity of the West Pearl and Pearl Rivers, and in fact show that the Pearl is closely related and properly the project scheduled for it, should be considered a part of the West Pearl Project.

The two projects have been found in separate administrative actions to have significant impact on the environment. If they had not no draft EIS would have been prepared. The cumulative effects, if the projects are implemented, will have even greater impact.





SIERRA CLUB, DELTA CHAPTER

June 23, 1973 Page 2

The benefit-cost ratio of 2.75 to 1 in the Pearl River EIS fails to consider any costs of damage to wildlife and fish. You have failed to obtain any comments from the Louisiana Wild Life and Fisheries Commission. Also, this draft EIS fails to describe or to quantify the costs or benefits, if any, to be derived from any works which might be done by the Louisiana Department of Public Works, from whom you have requested comments.

You have not stated a cost-benefit ratio on the East Pearl River Project.

As to both draft EISs, you have failed to show the effect of increased siltation and sedimentation on the Mississippi Sound. I thoroughly disagree that the increase in turbidity will be temporary and will have minimal effects on the environment. In this particular area, the drafts are grossly insufficient and additional data must be obtained. Siltation is aknown pollutant which is highly damaging to fish.

Please send me a copy of the final draft impact statements on these projects, and notice of any public hearings concerning them.

Sincerely yours,

Donis Tackin heiner

Doris Falkenheiner

Chairperson, Baton Rouge Sierra Club Group.





GULF COAST GROUP

SIERRA CLUB, DELTA CHAPTER

Post Office Box 935 Biloxi, Mississippi 39533

27 September 1973

Col. Drake Wilson, District Engineer Mobile District Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

In Ref: East Pearl River, Miss., Draft Environmental Statement

Dear Col. Wilson,

I only recently learned about the existence of this draft environmental impact statement. I would like for the following comments to be made a part of your official records for purposes of developing the final environmental impact statement. In the event that the delays for commenting have expired, I would like for a waiver to be granted.

The Gulf Coast Group of the Delta Chapter Sierra Club has carefully reviewed the draft environmental statement regarding maintenance dredging of the East Pearl River, Mississippi and offers the following comments:

- 1. The stated purpose of the project is "for use by commercial and private vessels, particularly the servicing of the Mississippi Test Facility." Yet later in the statement, it is admitted that the facility is about to be phased out(pp. 15-16).
- 2. It is incorrect to say no other Federal actions are pending that would have a cumulative significant environmental impact. There are currently proposed similar projects for the West Pearl, Wolf, Jourdan, and Pascagoula Rivers, and Gulfport, Mississippi. There are serious impacts related to the occurrence of heavy metals and dangers to benthic organisms in these areas, the extent to which has not been considered.
- 3. There is no benefit-to-cost ratio statement included.
- 4. There are archaeological sites in the area that may be affected by this project. Pre-pottery Indian sites are located near the mouth of the Pearl River along the margins of the Pearl River estuary.





GULF COAST GROUP

SIERRA CLUB, DELTA CHAPTER

Two horseshoe-shaped middens have been found, one containing primarily oyster shells and the other primarily Rangia shells. The larger midden has been dated at 1200 B.C.

- 5. The statement on soil completely neglects its critical importance in supporting fish nurseries upon which up to 97.5% of our commercial fisheries are dependent (Gunter 1967).
- 6. Most of the population growth in the study area is expected to continue in existing areas on the coast, not in areas directly related to the area of the proposed dredging project.
- 7. Trades and services are the predominant industries of the area, which do not require river transportation as intimated in the environmental statement.
- 8. Water chemistry values should be included in the statement.
- As the area is one comprising more than one-third of the total marshland in Mississippi, it should be carefully protected from unnecessary incursions.
- 10. A nine-foot projected depth of the river channel exceeds the requirements of at least 99% of pleasure craft in the area.
- 11. The statement on human well-being (p. 24) is contradictory. Earlier statements said the economy was not diversified because of the Mississippi Test Facility (p. 16), and that the Facility was being phased out (p. 15).
- 12. The statement on refaunation in the project area (p. 25) is misleading. Benthic organisms will be killed in the dredging area and others will be killed in the spoil deposit area. Although refaunation will occur in the dredge area, there is a net loss in benthic organisms.

Based on these factors, the Sierra Club must oppose the Draft environmental statement on not having sufficient redeeming features to overcome the obvious and potential adverse impacts on the environment of the area.

Please send to me the final impact statement of this project and notice of any public hearings concerning it.

Very truly yours,

William m. Hutter

William M. Hutter Acting Conservation Chairman Gulf Coast Group



Clifford M. D_anby 4843 Gabriel Drive New Orleans, Louisiana 70127

March 31, 1973

J. J. Danaher

Chief, Engineering Division

U. S. Army Corps of Engineers, Mobile District

P. O. Box 2288

Mobile, Alabama 36628

Dear Mr. Danaher:

Thank you for the copy of your Draft Environmental Statement, East Pearl River, Mississippi (Maintenance Dredging). I wish to offer the following comments on the project's impact statement.

RE: SAMEN-EE

In Section 3, Environmental Impacts of the Proposed Action, discussion of the effects of the project on water quality needs expanding. The channel to be dredged abuts the Intracoastal Waterway and the waterway allows increased flows of salt water into Lake Borgne. Therefore, the extent and impact of salt water intrusion should be discussed. Increased salimity extending further up the East Pearl River channel can have significant adverse affects on fish, plant life, and municipal water supplies.

Also, tidal flows will disperse silt and trubidity from the project over a wider area than indicated by the statement. Therefore, the statement that there will be a limited area affected is misleading. The extent of this impact needs fuller treatment.

Further, the increased recreation cited as a favorable effect has its unfavorable effects too. Pleasure craft using the waterway will add to pollution of the water from oil and gas emmissions, and from disposal of wastes.

Concerning Section 7, there will be irretrievable commitment of fossil fuels, a diminishing resource in this country. This resource commitment should be cited.

I appreciate the opportunity to comment on the project.

Please supply a copy of the final impact statement when it is issued.

Sincerely.

Cofford M. Ranky

cc: Environmental Protection Agency, Region IV

Orleans, Audubon Society

Appendix C

LETTERS OF COORDINATION ON REVISED DRAFT ENVIRONMENTAL STATEMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI 1600 PATTERSON DALLAS, TEXAS 75201

August 21, 1974

Mr. Richard E. Mueller REM Assistant Chief, Engineering Division Mobile District, Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Dear Mr. Mueller:

We have reviewed the Revised Draft Environmental Impact Statement, East Pearl River, Louisiana and Mississippi (Maintenance Dredging). The proposed project provides for the maintenance of a navigation channel nine feet deep, 200 feet wide and 1.3 miles long. The project channel connects the East Pearl River with the nine-foot contour in Lake Borgne. Maintenance dredging will be accomplished by hydraulic pipeline dredge and the spoil will be deposited in open water adjacent to the channel.

The following comments are offered for your consideration in finalizing the statement:

Project Description

1. We believe the statement, "There are no other Federal actions which, in connection with this project, would constitute a cumulatively significant impact on the environment" appearing on page 2 of the draft statement needs clarification. This statement could be interpreted to mean no other Federal projects are in the vicinity of this project, or, that it has been determined that such projects will not significantly affect the proposed project. We would suggest that the final statement discuss other Federal, state and local projects (if any) which might be located in the vicinity of the proposed action. Existing maintenance projects should be discussed because of the possible combined environmental effects such operations could exert on the aquatic ecosystem. Also, if it has been determined that the environmental impacts of dredging projects in the area are not related to the proposed project, information substantiating this contention should be provided in the final statement.

Environmental Setting

2. The final statement should provide additional information concerning the environmental effects of past maintenance dredging activities on the East Pearl River. This information would be helpful in assessing the potential impacts of the project on the terrestrial and aquatic environment.

Existing water quality information should be provided in order to evaluate the impacts of dredging on water quality. Also, we would suggest that a water monitoring program be implemented at the project site which would, at a minimum, record dissolved oxygen, turbidity, and heavy metal concentrations before, during and after maintenance dredging. Assurances that state water quality standards will not be exceeded during the maintenance operation should be given in the statement. If concentrations of pollutants should reach levels harmful to aquatic life, we suggest that temporary suspension, reduction or other modifications of the operation be considered until such time that water quality returns to acceptable levels.

Environmental Impact

- 3. According to the draft statement the shoreline estuaries in the vicinity of the project could be temporarily degraded by silt deposition. Since estuarine communities are considered fragile and represent a resource of value, we believe additional discussion of the possible adverse impacts on the shoreline estuaries should be included in the final statement.
- 4. As indicated in the statement, the disposal of the spoil as shown on figure III (page 24) could result in an alteration of flow patterns along the coast thus resulting in possible adverse effects on water quality. However, alternatives D and E, as discussed in the draft statement, would provide for increased current circulation. In order to minimize potential adverse impacts on water quality, we would suggest that the final statement give further consideration to either alternative D or E as the method of spoil deposition.
- 5. The discussion of mud flows indicates that it would be difficult to predict their presence or absence at the project site. However, it appears that mud flows could significantly affect the benthic community near the project spoil area. According to the draft statement, certain dredge sites have experienced flows extending to 2000 feet while other similar sites have had no appreciable movement. The final statement should discuss the potential impacts of mud slides on benthic organisms.

Also, a discussion of the preventive measures to control mudslides, which could be applied at the site, should be included in the final statement.

These comments classify your Draft Environmental Impact Statement as LO-2. Specifically, we have no objection to the proposed project. However, additional information is needed in order to assess fully the impacts on water quality. The classification and the date of our comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions, under Section 309 of the Clean Air Act.

Definitions of the categories are provided on the attachment. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and on the adequacy of the impact statement at the draft stage, whenever possible.

We appreciate the opportunity to review the Draft Environmental Impact Statement, and we would be happy to discuss our comments. Please send us two copies of the Final Environmental Impact Statement at the same time it is sent to the Council on Environmental Quality.

Sincerely yours,

Arthur W. Busch Regional Administrator

Enclosure



United States Department of the Interior

OFFICE OF THE SECRETARY

Southeast Region / 148 Cain St., N.E. / Atlanta, Ga. 30303

SEP 2 13

AIRMAIL

ER 74/839

District Engineer U.S. Army Corps of Engineers P.O. Box 2288 Mobile, Alabama 36628

Dear Sir:

As requested in Mr. Richard E. Mueller's June 24, 1974, letter to the Assistant Secretary, Program Development and Budget, we have reviewed the draft environmental statement for the proposed continuing operation and maintenance of the existing navigation channel at the East Pearl River, Hancock County, Mississippi, and St. Tammany Parish, Louisiana, for project effects on national park areas and historic sites, outdoor recreation, mineral, geology, hydrology, and fish and wildlife resources.

We offer the following comments for your consideration:

General Comments:

The revised statement is deficient in its treatment of environmental impacts, measures proposed to mitigate any adverse impacts, and project alternatives. The statement also tends to favor project justification.

The statement includes no discussion of measures which will be taken to minimize any adverse impacts resulting from the dredging and spoil deposition activity. A section should be added to the statement which addresses this subject.

Specific Comments:

Project Description

Page 2, paragraph 1

The estimated quantity of sediments to be dredged was given as 337,000 cubic yards in the initial draft environmental statement dated March 1973, and the same figure is given in the revised statement dated 15 months later. During the interim period the process of sedimentation of the channel has undoubtedly continued, as is true of any dredging project. We suggest that dredging requirements and any other data in

the environmental statement be given to a more realistic degree of accuracy, which in this case seems unlikely to exceed one significant figure (for example, 400,000 cubic yards).

Environmental Setting of the Project

Page 11

Figure II on page 11 indicates that site 15 is located in St. Tammany Parish, Louisiana. The accompanying tabulation, however, on page 12, lists site 15 as the existing Pear! River Recreation Boatway in Hancock County, Mississippi. This discrepancy should be corrected. Likewise, the map and tabulation should show the following existing recreation facilities in the area which involve federal funds:

- A. Pine Park Slidell, Louisiana;
- B. Pear! River Boat Ramp Pearl River, Louisiana; and,
- C. West Pearl Natural and Scenic River From the Mississippi state line to its entrance into Lake Borgne.

Page 22

Table 5 is entitled "Chemical analyses of sediments...," but no indication is given of the number of samples, of their location, or of the range of values. We believe that complete analytical data should be provided for every sample, unless the number is very large. This provision should be made because the expense of the analyses is large by comparison with the cost of reproducing the data. In addition, multiple analyses provide an important indication of uniformicy of distribution of the pollutants, of the occurrence of anomalous analyses, and possibly of reproducibility of the analyses. Also, the location and depth of samples should be given. If only a single analysis is available it becomes more important to provide data on depth and location, and the validity of the results might be doubtful as applied to over 300,000 cubic yards of dredged sediments.

Environmental Impact of the Proposed Action

Page 25, paragraphs 1, 2, and 5

The dredging of 337,000 cubic yards of spoil, and its subsequent deposition in open water east of the channel, is bound to have significant impacts upon the adjacent estuarine environment of Lake Borgne, and should be discussed.

Page 25, paragraph 5

The loss of fishfood organisms should be acknowledged. Although small, this loss will have some effect on fish and their distribution.

Page 26, paragraph 3

The result of improved navigation in the channel will cause increased boating traffic, both private and commercial. This will lead to further air and water pollution as well as solid waste accumulation. In times of unusually low river flow, pollution from diesel fuel, gasoline and refuse thrown overboard from various crafts could become environmentally degrading. The statement relates this fact (page 26) but fails to adequately address its impacts.

Page 26, paragraph 6

A map showing the location of the approved dump area for all waste generated on the floating plant (page 26) should be included.

Page 28, paragraph 2

Statements throughout the revised draft, such as found on page 28 under n. <u>Material Disposal</u>, play down the negative impacts which could result from the dredging operation. The proposed action should be more fully discussed and quantified according to the following:

- A. Time frame of dredge operation;
- B. Length of expected turbidity;
- Alteration or destruction of recreational or commercial fishing area;
- D. Extent of possible "mud flows" (page 29) caused by spoil placement; and.
- E. Effect of raising estuarine floor elevation in spoil area on deep draft pleasure boating.

Alternatives to the Proposed Action

Pages 29 and 30

The statement includes only a superficial treatment of the alternative methods of spoil removal. The positive and negative impacts of each of the alternatives presented should be addressed more fully. The discussion should include a breakdown of cost differences for spoil removal so the reader can get a better understanding of the possible tradeoffs involved.

Page 30, paragraphs 3 and 4

Reasons for rejecting spoil disposal methods presented in alternatives "d" and "e" should be given. Changing present patterns of current flows and water circulation may have an effect on the fishery resources of the area.

Page 30, paragraph 5

Among the alternatives to the proposed disposal of spoils on the east side of the clannel is disposal on the west side of the channel (page 30). It is stated that "The relative benefits or adverse effects resulting from such a placement cannot be immediately determined due to the lack of available information on current patterns in the vicinity." We feel that the quantity to be dredged is sufficiently large and the disposal area is so situated that significant savings might be realized by collecting the requisite current data during the course of the initial dredging operation, or subsequently, in order to select an optimum site for disposal of spoils from future maintenance dredgeing. If only 5 percent of the spoils could be prevented from drifting back into the channel, the savings might pay for the cost of current-data acquisition that would promote continued savings in the future.

Any Irreversible and Irretrievable Commitments of Resources Which Would Be Involved In The Proposed Action Should It Be Implemented

Page 31, paragraph 2

The project would not adversely affect any mineral operation or mineral resource. However, the statement indicates there will be a "loss of fossil fuels." This "loss" is apparently in reference to fuel which will be consumed by the dredging operation. The final statement might clarify this point.

Sincerely yours,

(Miss) June Whelan

Special Assistant to the Secretary

Southeast Region

UNITED STATES DEPARTMENT OF COMMERCE The Assistant Secretary for Science and Technology Washington, D.C. 20230

August 19, 1974

Mr. Richard E. Mueller (REM)
Asst. Chief, Engineering
Division
Department of the Army
Mobile District, Corps of
Engineers
P.O. Box 2238
Mobile, Alabama 36628

The draft environmental impact statement for "East Pearl River, Louisiana and Mississippi (Maintenance Dredging)," which accompanied your letter of June 24, 1974, has been received by the Department of Commerce for review and comment.

The statement has been reviewed and the following comments are offered for your consideration.

The Department of Commerce recognizes the necessity for maintenance dredging of commercially important waterways. The disposal of the spoil material far offshore by barge or in diked land or shallows should receive the most serious consideration in our opinion, since the currents transverse to the channel and storm waves would be detrimental to the project as now planned.

Thank you for giving us an opportunity to provide these comments, which we hope will be of assistance to you. We would appreciate receiving a copy of the final statement.

Sincerely,

Sidney R. Galler

Deputy Assistant Secretary for Environmental Affairs



UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

P. O. Box 610 Jackson, Mississippi 39205

August 15, 1974

Mr. Richard E. Mueller Reg Asst. Chief, Engineering Division Mobile District, Corps of Engineers P. O. Box 2288 Mobile. Alabama 36628

Dear Mr. Mueller:

We have reviewed the draft environmental statement on East Pearl River, Louisiana and Mississippi (Maintenance Dredging), dated May 1974.

We feel that the statement adequately expresses the benefits and adverse effects of the project.

This project involves only a marine environment with no dry land excavation or deposition. We, therefore, feel that erosion carried by rainfall runoff will not be a problem.

We appreciate the opportunity to review and comment on this environmental statement.

Sincerely,

W. L. Heard

State Conservationist

cc:

Kenneth E. Grant, Administrator SCS, Washington, D. C. Fred H. Tschirley, Coordinator Environmental Quality Activities Washington, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Post Office Box 1630 - Alexandria, Louisiana 71301

July 11, 1974

Mr. Richard E. Mueller Assistant Chief, Engineering Division Mcbile District, Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Dear Mr. Mueller:

This is in answer to your letter of June 24, 1974, enclosing a copy of the revised draft environmental statement for continuing operation and maintenance of the existing navigation channel at the mouth of the East Pearl River, Louisiana and Mississippi.

We have reviewed this environmental statement and believe it to be adequate; we have no comments to offer.

Sincerely,

alton Mangum

State Conservationist



SCJTHERN REGION P. O. BOX 20636 ATLANTA, GEORGIA 30320

July 31, 1974



Mr. Frank C. Deming Chief, Engineering Division Department of the Army Mobile District, Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Dear Mr. Deming:

We have reviewed the following Draft Environmental Impact Statements for potential environmental impact for which this agency has expertise:

Draft Environmental Statement for Mobile Harbor (Maintenance Dredging), Mobile County, Alabama

Revised Draft Environmental Statement for Continuing Operation and Maintenance of the Existing Navigation Channel at the mouth of the East Pearl River, Louisiana and Mississippi

Draft Environmental Statement for Tombigbee River and Tributaries, Luxapalila Creek Segment, Alabama and Mississippi.

Our review indicates there will be no significant adverse effects to the existing or planned air transportation system as a result of these projects.

Sincerely,

BENNY COFRAZIER

Chief, Planning and Appraisal Staff

P. O. BOX 1689 FORT WORTH, TEXAS 76101



JUL 2 9 1974

Mr. Richard E. Mueller Assistant Chief, Engineering Division Attention: SAMEN-EE Mobile District, Corps of Engineers, USA P.O. Box 2288 Mobile, Alabama 36628

Dear Mr. Mueller:

We have reviewed the proposal for continuing operation and maintenance of the existing navigation channel at the mouth of the East Pearl River, Louisiana and Mississippi, as outlined in your letter of June 24, 1974.

We find no adverse environmental impact nor any conflict of interest with aviation concerns of the Federal Aviation Administration.

Sincerely,



U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION 666 North Street, Suite 105

Jackson, Mississippi 39202

July 12, 1974

Mr. Richard E. Mueller
Assistant Chief
Engineer Division
Department of the Army
Mobile District, Corps of Engineers
P. O. Box 2288
Mobile, Alabama 36628

Dear Mr. Mueller:

The Revised Environmental Statement accompanying your memorandum of June 24, 1974, has been reviewed.

We do not consider that the proposed project for continued maintenance of the East Pearl River navigation channel will have any adverse environmental effects on highway transportation in this area.

Thank you for the opportunity to comment on the draft statement.

Sincerely yours,

E./L. SHAW / Division Engineer



U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION REGION SIX

750 Florida Boulevard Baton Rouge, Louisiana 70801

July 15, 1974

IN REPLY PIFFER TO

Revised Draft Environmental Statement - East Pearl River, Louisiana and Mississippi (Maintenance Dredging)

Mr. Richard E. Mueller, Assistant Chief Engineering Division Mobile District, Corps of Engineers P. O. Box 2288 Mcbile, Alabama 36628

Dear Mr. Mueller:

Your June 24, 1974, letter transmitted to us a revised draft environmental statement for maintenance dredging of the existing navigation channel at the mouth of the East Pearl River - Louisiana and dississippi.

The project should not have any adverse effect on existing highways and there are no new proposed highway projects in this vicinity.

We appreciate the opportunity for review of the statement.

Sincerely yours,

A.M. C. Reinhardt

Division Engineer

Fitzell & Sound



DEPARTMENT OF TRANSPORTATION UNITED STATES COAST GUARD

ADDRESS REPLY TO: COMMANDER (MED) EIGHTH COAST GLIARD DISTRIP T CUSTOMHOUSE NEW ORLEANS, LA 70130

JUL 1 2 1974

Mr. Frank C. Deming Chief, Engineering Division Department of the Army Mobile District, Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

> RE: East Pearl River, Louisiana and Mississippi (Maintenance Dredging)

Dear Mr. Deming:

We have reviewed the referenced draft environmental statement as requested in your letter dated 24 June 1974 and have no comments to make.

Sincerely yours,

J. F. MUNDY, JR.

Captain, U. S. Coast Guard Chief, Marine Safety Division By direction of the Commander Eighth Coast Guard District



DEPARTMENT OF TRANSPORTATION UNITED STATES COAST GUARD

MAILING ADDRESS.
U.S. COAST GUARD (G-WS/73)
400 SEVENTH STREET SW.
WASHINGTON, D.C., 200-70
PHONE: (202) 426-2262

3 JUL 1974

Mr. Richard E. Mueller Asst. Chief, Engineering Division Mobile District, Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Dear Mr. Mueller:

This is in response to your letter of 24 June 1974 addressed to Captain W. R. Riedel concerning a revised draft environmental impact statement for continuing operation and maintenance of the navigational channel, East Pearl River, Louisiana and Mississippi.

The Department of Transportation has reviewed the material submitted. We have no comments to offer nor do we have any objection to this project.

The opportunity to review this revised draft statement is appreciated.

Sincerely,

R.I. EDICE

- Company



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT JACKSON AREA OFFICE 101-C, 3rd FLOOR, WOODROW WILSON AVE., WEST, JACKSON MALL

101-C, 3rd FLOOR, WOODROW WILSON AVE., WEST, JACKSON MALL JACKSON, MISSISSIPPI 39213

July 8, 1974

IN REPLY REFER TO:

4.5PP

Mr. Richard E. Mueller SW Asst. Chief, Engineering Division Mobile District U. S. Army Corps of Engineers P. O. Box 2288 Mobile, Alabama 36628

Dear Mr. Mueller:

SUBJECT: Draft Environmental Statement

Continuing Operation and Maintenance of Existing Navigation Channel at the

Mouth of East Pearl River

In response to your letter of 24 June 1974, requesting our review and comments on the above project, we would like to advise you as follows:

- 1. Continued dredging is necessary to maintain a suitable channel to the Mississippi Test Facility and other development in the lower reaches of the East Pearl River. For this reason, we support the above project.
- 2. Since a growing problem exists with respect to the disposal of dredged materials, as indicated on page 28, perhaps consideration might be given to transport of such materials and deposit in floodway fringe areas--in order to reduce flood hazard in those areas.

In future correspondence, please note that Mr. James S. Roland is now Director of this office.

Sincerely,

O. A. Wells, Jr. ./ Director of Operations

cc: Mr. Jack Different

Mr. William M. Headrick



STATE OF MISSISSIPPI

OFFICE OF THE GOVERNOR

WILLIAM L. WALLER
GOVERNOR

WM. M. HEADRICK
COURDINATOR OF FEDERAL-STATE PROGRAMS

August 19, 1974

Mr. Richard E. Mueller Assistant Chief, Engineering Division Mobile District, Corps of Engineers Post Office Box 2288 Mobile, Alabama 36628

Dear 'ir. Mueller:

The enclosed letter from the Mississippi Marine Resources Council is forwarded as additional comments to those of August 14, 1974, on State Clearinghouse No. 74062802. The comments of all State agencies should be considered in evaluating this draft environmental impact statement.

Sincerely,

Edward A. May, Jr.

Clearinghouse Director

lcr

Enclosure



Mississippi Marine Resources Council

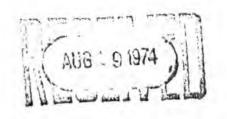
Post Office Box 497 Long Beach, Mississippi 39560. 601-864-4602

August 16, 1974

James B. Rucker PHD Executive Director

> Mr. Edward A. May, Jr. Federal-State Programs Suite 400 - Watkins Building 510 George Street Jackson, Mississippi 39205

Dear Mr. May:



The Mississippi Marine Resources Council has coordinated a review of the revised draft environmental impact statement, East Pearl River (maintenance dredging), prepared by the Mobile District, U. S. Army Corps of Engineers with data prepared under contract by the Gulf South Research Institute. This review was conducted at the request of the Coordinator of Federal-State Programs, Office of the Governor of Mississippi, and the agencies invited to participate in the review include the Director of the Gulf Coast Research Laboratory and members of his staff serving on the Environmental Affairs Committee, and the Biologist for the Marine Conservation Commission. Written comments by the agencies invited to participate in this review were not received in time for inclusion in the consolidated state review and the following comments have been formulated by the staff of the Mississippi Marine Resources Council. Our comments are referenced to the page on which statements we are concerned about appear or to the section of the statement of specific concern.

Chemical analysis of the bottom sediments of the Gulf Intracoastal Waterway at mile 40.1 which is in the immediate vicinity of the East Pearl River entrance channel is presented in Table 5 on page 22. The information contained in this table revealed that several chemical parameters exceeded the maximum Environmental Protection Agency criteria for open water disposal of dredged sediments. This is of particular concern to Mississippi Marine Resources Council because the suspen on of contaminated bottom sediments degrades water quality and effects the ability of the water body in the vicinity to support aquatic organisms.

As stated in the revised draft environmental impact statement the data on chemical analysis is from bottom sediments in close proximity to the East Pearl River entrance channel. No information is available on the chemical composition of bottom sediments within the East Pearl River entrance channel. Accordingly, we recommend that the Corps of Engineers initiate a sediment sampling program in the East Pearl River confluence channel and determine if the sediment in this area is acceptable for open water disposal.

The other major item of importance relates to the alternatives discussed in Section 5. Spoiling operations are presently planned for the east side

Mr. May August 16, 1974 Page Two

of the channel with alternative disposal of the spoil materials by barging from the site; disposal on nearby shoals or islands; and depositing spoil on the eastside of the channel. As pointed out in our comments to you on November 7, we are concerned that oyster reefs established in the area may be adversely affected by spoil disposal and subsequent sediment movement.

Alternatives d, e, and f appear to offer promise of being significantly more desirable than the proposed action from an environmental point of view. As presented, these alternatives evidently do not offer serious obstacles to channel maintenance, and could evidently be accommodated with relative ease. Therefore, we are extremely puzzled as to why these alternatives are not discussed further or one or a combination of several incorporated as the proposed method of performing maintenance dredging. We recommend this be given serious consideration by the Corps of Engineers and appropriate modifications made in project plans that will enhance the environmental acceptability of the project.

The proposed period when dredging would be undertaken has not been stated by the Corps of Engineers. To avoid conflicts with post larval shrimp using the proposed dredge and spoil areas, it is recommended that dredging be undertaken between October and February. If dredging is required beyond this period of time the Marine Resources Council should be contacted so that possible protective measures can be employed.

This review of the draft statement constitutes the third analysis we have undertaken of environmental impacts associated with the proposed action. We are extremely dismayed by the fact that several of our comments, recommendations and requests of earlier reviews have not been addressed in this most recent document. This is especially discouraging in view of the fact that the environmental statement is to cover the life of the project (usually 50 years), and the impacts we have questioned pose serious environmental problems such as toxic material contamination, alteration of current patterns and water quality, and optimum dredging practices. These questions are of such magnitude and importance, especially when viewed in a 50 year perspective, that they must be investigated and addressed in any final statement prepared and submitted to the Council on Environmental Quality. Unless these points are considered, we believe that the statement is seriously deficient and does not satisfy the letter or spirit and intent of the National Environmental Policy Act of 1969.

In our most recent comment on this statement in November, 1973, we requested that the Corps of Engineers provide us with specific items of information that would greatly aid in our review of the project. To date we have not received a response to this request. We reiterate our request to the Corps of Engineers for that information in the interest of enhancing meaningful review of federal projects.

Sincerely

James B. Rucker

Director C-20



STATE OF MISSISSIPPI

WILLIAM L. WALLER

WM. M. HEADRICK
COORDINATOR OF FEDERAL-STATE PROGRAMS

STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

TO: Mr. Richard E. Mueller

Assistant Chief, Engineering Division Mobile District, Corps of Engineers

Post Office box 2288 Mobile, Alabama 36628 State Clearinghouse Number

74062802

Date: August 14, 1974

PROJECT DESCRIPTION: Revised draft environmental statement -- East Pearl River, Louisiana and Mississippi -- Maintenance Dredging.

- (x) 1. The State Clearinghouse has received notification of intent to apply for Federal assistance as described above.
- (--) 2. The State Clearinghouse has reviewed the application(s) for Federal assistance described above.
- (--) 3. After proper notification, no State agency has expressed an interest in conferring with the applicant(s) or commenting on the proposed project.
- (--) 4. The proposed project is: () consistent () inconsistent with an applicable State plan for Mississippi.
- (x) 5. Although there is no applicable State plan for Mississippi, the proposed project appears to be: (x) consistent () inconsistent with present State goals and policies.

COMMENTS: The attached letters from the Pearl River Basin Development District and the Mississippi Board of Water Commissioners are made a part of this final Clearinghouse action.

This notice constitutes FINAL STATE CLEARINGHOUSE REVIEW AND COMMENT. The requirements of U. S. Office of Management and Budget Circular No. A-95 have been met at the State level.

Edward A. May, Jr.

Assistant to the Coordinator

PEARL RIVER BASIN '

DEVELOPMENT

2304 Riverside Drive P.O. Box 53 Alvin Beck, Executive Vice President Phone 354-0301 Jackson, Mil. 12920

Phone 354-6301 Jackson, Mil.1 29778

August 12, 1974

Federal-State Programs Suite 400, Watkins Building 510 George Street Jackson, MS 39205

ATTENTION:

Mr. Edward A. May, Jr.

REGARDING:

Position Statement on Maintenance Dredging -

East Pearl River, Mississippi and Louisiana

Gentlemen:

Pursuant to your request we have solicited comments from all state agencies having any interest in the above referenced project. Included in this group were the Mississippi Board of Water Commissioners, Mississippi Forestry Commission, the Mississippi Air and Water Pollution Control Commission, Mississippi State Board of Health, the Mississippi Geological Survey, the Mississippi Game and Fish Commission, and the Pearl River Basin Development District. We herein report to you the position statement of these state agencies as to the referenced project.

No substantial issues have been raised by the aforementioned state agencies in that the potential utilization of the Mississippi Test Facility offsets any minor drawbacks the project might present from both a practical and an environmental standpoint. The Board of Water Commissioners has submitted a written statement of review of the Draft Environmental Impact Statement which points out several technical deficiencies to which we direct your attention. This letter is attached for your inspection.

We realize that this statement does not address "in depth" any particular phases of this undertaking, however, we feel this adequately reflects the views of the state agencies involved. To reiterate, the concensus appears to be that the benefits which potentially may accrue from utilization of the Mississippi Test Facility provide sufficient justification for the project and thus no substantial adverse comments have been submitted.





Federal-State Programs August 12, 1974 Page 2

If we can provide any additional information or any clarifying information, do not hesitate to call on us.

Sincerely,

Alvin Beck Executive Vice President

AB/js

cc: Mississippi Board of Water Commissioners

Mississippi Forestry Commission

Mississippi Air and Water Pollution Control Commission

Mississippi State Board of Health Mississippi Geological Survey

Mississippi Game and Fish Commission



BOARD OF WATER COMMISSIONERS 416 NORTH STATE STREET JACKSON, MISSISSIPPI 39201

354-7236 July 19, 1974

Mr. Alvin Beck, Executive Vice Pres. Pearl River Basin Development Dist. 2304 Riverside Drive Box 53 Jackson, Mississippi 39205

SUBJECT:

Draft Environmental Statement:

East Pearl River, Louisiana and Mississippi

(Maintenance Dredging)

Dear Mr. Beck:

In response to your letter of July 9, 1974 I have been directed by Mr. Pepper to review the above captioned document and provide comments if necessary. At this time I have completed my review, and the following remarks represent my comments in regard to the content of the Draft Environmental Statement.

Page 7, Table 1.

The land area of Hancock County, Mississippi is given as 482 square miles by the 1973 edition of the Mississippi Statistical Abstract, and not 485 square miles as indicated by Table 1.

Page 15, Line 8.

The statement that 9,069 tons were transported along the East Pearl River in 1969 disagrees with the table on the same page.

Page 17, Line 2.

The statement that only 60 percent of the labor





force of Hancock County is able to find work in the county is inconsistent with figures given in Vol. 1, Part 26 of the Census of Population for 1970. The 1970 census indicates that of 5,336 workers in the county, 3,506 or 66 percent are employed in the county. Of the remaining labor force, 1,447 or 27 percent work outside the county with 383 or 7 percent not reporting their place of work.

In summary, the above comments are directed only toward the content of the review material, and therefore are not intended to discredit or question the need for the project. Although the information from page 15 of the Environmental Statement indicates that waterborne commence along the East Pearl River has decreased rapidly since 1965's peak, the possibility of increasing the usage of the Mississippi Test Facility is adequate justification for the project.

Thank you for the opportunity to participate in this review, and if I may be of further assistance, please contact me.

Sincerely,

MISSISSIPPI BOARD OF WATER COMMISSIONERS

John E. Brown

John E. Brown

Planner

JEB: dh



State of Touisiana DEPARTMENT OF PUBLIC WORKS

P. O. BÓX 44155, CAPITOL STATION BATON ROUGE, LOUISIANA 70804

July 22, 1974

BOARD OF PUBLIC WORKS

GEORGE CHANEY, CHAIRMAN
EMMET! A. EYMARD
P. P. VERRETT, SR.
RICHARD P. GIBSON
ROLAND CARTER

Colonel Drake Wilson
District Engineer
Department of the Army
Mobile District
Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628

Dear Colonel Drake:

Reference is made to a letter from your office on June 24, 1974, transmitting a revised draft environmental statement for continuing operation and maintenance of the existing navigation channel at the mouth of the East Pearl River, Louisiana and Mississippi, and requesting our review and comments. This project was originally authorized by Congress in 1910 as the East Pearl River, Mississippi Navigation Project.

We have reviewed this revised draft environmental statement and have no objections with respect to navigation, flood control, or drainage; however, since the majority of the dredged material disposal site is located within the State of Louisiana, the method of disposal of the dredged material should not be permitted to in any way affect rights of the State of Louisiana to this state owned water bottom. It is requested that plans for disposal of dredged material be provided to the Louisiana Department of Public Works and the State Land office prior to commencement of dredging operations to insure the protection of the state owned water bottoms.

In reviewing your revised draft environmental statement we have found two minor errors which should be corrected on page 9 of the report. These are both in the second-to-last paragraph on that page. Fort Pike is not in St. Tammany Parish but is in Orleans Parish. The statement that the Pearl River Wildlife Management Area will soon be expanded should reflect that

Colonel Drake Wilson District Engineer Mobile District July 22, 1974 Page 2

this additional area has already been acquired by the Louisiana Wildlife and Fisheries Commission.

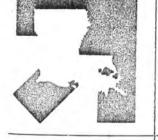
We appreciate your furnishing us the opportunity to express our views in relation to the continuing operation and maintenance of the existing navigation channel.

Sincerely yours,

ROY AGUILLARD

DIRECTOR

DVC/cdh



OFFICE OF STATE PLANNING OFFICE OF THE GOVERNOR

EDWIN EDWARDS GOVERNOR

DATE:

FROM:

George P. Gullett, Environmental Planner

SUBJECT: Environmental Statement, East Pearl River

Maintenance Dredging

We have received the information you forwarded to our office for review. Thank you for keeping us informed of project proposals.

If we have any pertinent comments concerning your proposal we will notify you in the near future.

11

PATRICK W. RYAN EXECUTIVE DIRECTOR

PAUL R. MAYER, JR. ASSISTANT DIRECTOR



J. BURTON ANGELLE

WILD LIFE AND FISHERIES COMMISSION 400 ROYAL STREET NEW ORLEANS 70130

EDWIN EDWARDS

August 12, 1974

Colonel Drake Wilson District Engineer, Mobile District United States Army Corps of Engineers P.O. Box 2288 Mobile, Alabama 36628

Dear Colonel Wilson:

Personnel of the Louisiana Wild Life and Fisheries Commission have reviewed the Revised Draft Environmental Impact Statement for the East Pearl River, Louisiana and Mississippi (Maintenance Dredging). We would like to commend the Mobile District for circulating a Revised Draft in order to allow full participation by interested parties within the State of Louisiana and for incorporating much of the information we requested in the Revised Draft. Additional attention has been given to this project, and we wish to offer a number of suggestions concerning the Revised Draft and project features.

Of major interest to us is the location of the spoil disposal site and the possibilities of using the dredged material in a beneficial manner. The use of dredged spoil for marsh building has been suggested for a number of projects in recent years, and we think that this alternative should be thoroughly explored for this project. Included with these comments is a map showing the location of existing private oyster leases in Louisiana, the spoil areas proposed by the Corps of Engineers and two alternate spoil disposal sites that might be suitable locations for marsh building. We are not aware of any known oyster leases that would be adversely affected by the Mississippi site (site 1) but authorities in that

Colonel Drake Wilson Page 2 August 12, 1974

state should be contacted concerning any such conflicts. The Louisiana site (site 2) may have added benefits in building marsh and protecting an existing railroad from erosion. The Inventory of Basic Environmental Data for South Louisiana published by the New Orleans District Corps of Engineers indicates that each acre of marsh in the Pontchartrain-Maurepas-Porgne-Chandeleur Estuary zone supports a harvest of 109.2 lbs. of fish annually with a value of \$6.50. Recent figures released by the National Marine Fisheries Service indicate an increase in the average per capita consumption of seafood by Americans. The 1973 per capita consumption of 12.6 pounds per year is a new record.

There are a number of details which would need further study concerning building of marsh. Enclosed with this statement are a leaflet on "Vegetative Dune Stabilization in North Carolina" by C.T. Blake, W.W. Woodhouse, and E.D. Seneca of the North Carolina Agricultural Extention Service and a publication titled Vegetation, Water and Soil Characteristics of the Louisiana Coastal Region by R.H. Chabreck. We have reviewed data on salinities in the proximity of the proposed marsh building sites and believ that wire grass (Spartina patens) would be suitable for vegetating these areas. Plans for similar work at Babtiste Collette Bayou, Louisiana call for depositing spoil to an elevation of 3 feet mean low Gulf, and this may be a suitable elevation for the proposed sites. If the Corps of Engineers thinks this suggestion merits further study, personnel of this agency would be glad to meet with you on this matter, and it may be possible to form a team of the Corps of Engineers and Louisiana Wild Life and Fisheries Commission personnel to monit the outcome of any marsh building attempt.

Another alternative that should be discussed is to postpone maintenance until there is a greater demand for use of the channel. Commercial navigation appears to be greatly reduced in the East Pearl River at the present time, and no indication of future demands for use of the project channel or benefit-cost ratio data was contained in the statement. We realize that the East Pearl River Navigation Project was constructed long before NEPA and that the original draft statement concerning maintenance was circulated before the current CEQ Guidelines for Preparation of Environmental Impact Statements were published, however, we do feel compelled to bring to your attention an oversight on the Corps part in failure to include benefit-cost analysis in the Revised Draft. Such data would indicate the timeliness of maintenance needs. Also relating to the need for maintenance, what are the present channel dimensions?

A description of other Corps of Engineers projects effecting the Pearl River (particular those involving navigation) would add significantly to the EIS. We are still in need of information on the type of material to be transported, relative hazard of spills, and effects on the Pearl River itself as suggested in our comments on the previous Draft. Also, the question of salt water intrusion has been called to our attention as a possible adverse effect of this channel. The Cooperative Gulf of Mexico Estuarine Inventory and Study. Mississip

Colonel Drake Wilson Page 3 August 12, 1974

(J.Y. Christmas, et. al. 1973) indicates saline marsh extending up the east side of the Pearl River. Work by Chabreck, Palmisano and Joanen (map enclosed) (1968) indicates brackish and intermediate marsh on the west side of the river. Perhaps some clarification of this discrepancy and an explanation of any possible salt water intrusion could be included in the Final EIS.

Since the project vicinity includes a number of oyster reefs, a program to monitor the effects of project dredging on known oyster beds might be in order. Even though the unusual influx of fresh water during 1973 and 74 resulted in extensive oyster mortalities, oysters should become reestablished rapidly in the project vicinity. It might be appropriate to mention plantings of oyster clutch material made in Lake Borgne by the Louisiana Wild Life and Fisheries Commission during recent years.

We wish to take exception to the treatement given EPA guidelines for open-water disposal of dredged sediments (page 23). Pending review of the guidelines is not sufficient grounds to imply that they should not be followed. Review may result in proposals for modifications that are either more stringent or more relaxed, and no action should be taken predicated upon a future decision to relax the criteria for open water disposal. It is suggested that samples be taken from the project channel. If the high oil, grease and mercury content in samples in the GIWW resulted from pollution by users of the waterway, the less heavily used project channel might meet present requirements.

There are several minor changes that would improve and update the EIS. The Commission is happy to inform you that the Pearl River Wildlife Management Area was expanded by 9,952 acres on December 18, 1973 (page 9). Mention of the status of various streams in the project area as Louisiana Natural and Scenic Rivers would be appreciated. Portions of the Bogue Chitto and Tchefuncte Rivers and the entire West Pearl River in St. Tammany Parish are Louisiana Natural and Scenic Rivers. We question the occurrence of any significant use of the channel in Lake Borgne by waterskiers and suggest that mention of waterskiers be deleted (page 26). On page 19, Neriting recliuata should follow Polychaete worms rather than mulluscs. It might be more appropriate to say the most common fish in the deeper channel waters are probably . . . rather than dominated by . . . (page 20), since dominance implies more than just superior numbers. The EIS should be corrected to state that the American Alligator is on the Department of the Interior's Rare and Endangered Species List since this species is neither rare or endangered in Louisiana at this time. The Southern Bald Eagle which is also on the list and the Osprey which is of undetermined status may be visitors to the area. Freshwater fishery landings recorded by the Bureau of Commercial Fisheries and the National Marine Fisheries Service show that freshwater commercial fishery landings have averaged over 20,600 pounds annually in St. Tammany Parish from 1963 to 1971. The significance of the freshwater fishery in the project area should be recognized.

Colonel Drake Wilson Page 4 August 12, 1974

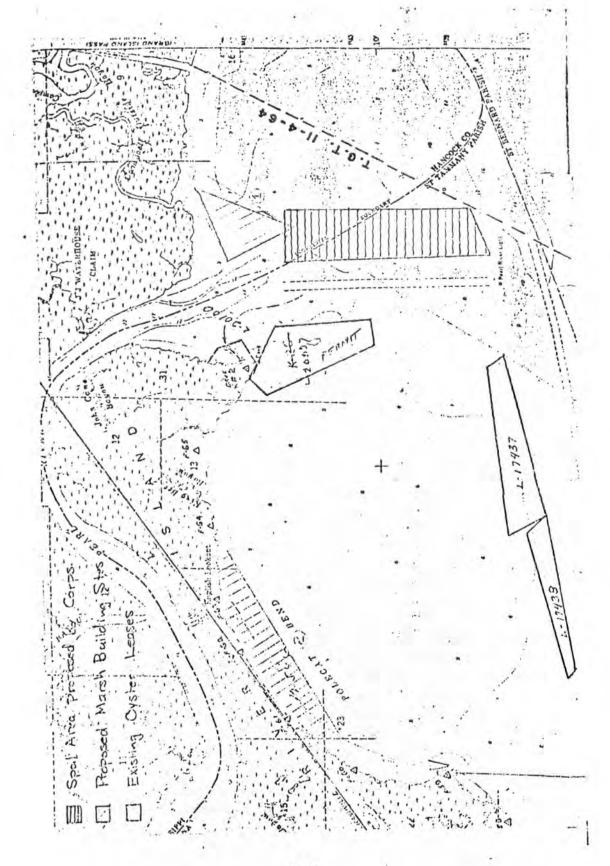
We hope that these comments and accompanying material will be of help to you in project planning and in preparing a Final EIS. If the Louisiana Wild Life and Fisheries Commission can be of assistance in refining plans for the marsh building alternative, please feel free to contact us.

Sincerely yours,

J. Burton Angelle

Director

JBA:MW/ibm





M. D. KOSTMAYER, INC.

Agent

UNITED STATES FIDELITY AND GUARANTY COMPANY

700 United Fruit Building

Telephone: 525-6151

NEW ORLEANS, LOUISIANA 70130

July 8,1974

Mr. Richard E. Mueller, Ass't. Chief, Rfu Engineering Division Dept. of the Army Mobile District, Corps of Engineers P.O. Box 2288 Mobile, Ala. 36628

Re: SAMEN-EE

Dear Mr. Mueller:

We have received and appreciate a copy of the revised draft environmental statement for continuing maintenance dredging of the existing navigation channel at the mouth of the East Pearl River, Louisiana and Mississippi.

In our original comments on this proposal, we advised that no where was there any reference to salt water intrusion in the Pearl River Delta which has drastically changed the ecology and the entire region.

Nowhere is there any reference in either the original or the recent statement by Gulf South Research Institute for the fact that there are actually three navigable channels into East Pearl River, one being the West Mouth of the West Pearl River, the second being the channel recently constructed through Little Lake and the third being the channel at the mouth of the East Pearl River.

It would certainly seem that three channels are unnecessary and simply provide for continued salt water intrusion.

Yours very truly

M.D. Wostmayer Jr.



SIERRA CLUB, DELTA CHAPTER

208 West Ardenwood Drive Baton Rouge, Louisiana 70806

July 30, 1974

Department of the Army Mobile District, Corps of Engineers F. O. Box 2288 Mobile, Alabama 36628

Re: East Pearl River, La. and Miss. (Maintenance Dredgining)

Gentlemen:

Thank you for allowing me to comment on the revised draft environmental statement of May, 1974. Since my comments of June 23, 1973, I have changed positions in the Sierra Club, and am presenting these comments on behalf of Delta Chapter, a regularly organized chapter of the Sierra Club.

The Sierra Club is a national conservation organization with over 150,000 members, approximately 1,200 of whom reside in in the geographical limits of Delta Chapter. Delta Chapter is comprised of the states of Louisiana and Mississippi, and has two recognized regional groups operating in the Pearl River Basin area. The Mississippi Gulf Coast Group is a regional group representing Sierra Club members in the Mississippi counties along the Mississippi Gulf Coast. The Chappapeela Group represents Sierra Club members in the Florida Parishes of Louisiana, with the exception of East Baton Rouge Parish.

Sierra Club members regularly use the Pearl River Basin for outdoor recreation and nature study. They are particularly concerned with any public works project which alone, or in combination with other similar projects, will adversely affect the high natural quality of the Pearl River Basin. In particular they are concerned about the high natural qualities of the Honey Island Outdoor Recreation Area operated by the Louisiana Wildlife and Fisheries Commission, and the Nest Pearl River which is protected by the Louisiana Natural and Scenic Rivers System Act of 1970.



Department of the Army Mobile, Alabama 36628 July 30, 1974 Page 2

The Council on Environmental Quality has prepared and published Guidelines For Preparation of Environmental Impact Statements.

40 CODE OF FEDERAL REGULATIONS 81500 et seq. 38 Federal Register 20550 (August 1, 1973).

The revised statement does not comply with the CEQ guidelines in the following respects:

 The agency did not use the environmental impact statement process to explore alternative actions that will avoid, or minimize adverse impacts. 40 CFR \$1500.2(b).

All that has been done is to list a few of the possible alternatives and certain conclusions regarding them. There is no detailed discussion of the costs and benefits of each possible alternative. There is no discussion whatsoever of the costbenefit analysis on the proposed project.

 The revised statement does not disclose sufficient detail to gerve as the means for assessing the proposed action. 40 CFR \$1500.7(a).

This is exhibited by the failure to provide a detailed discussion of all possible alternatives, even those which may not be within the statutory power of the agency. It clearly attempts to be an apologia, and a poor one at that, for a decision already finalized.

 The agency has not stated the interrelationships and cumulative environmental impacts of the proposed action and other related Federal projects. 40 CFR \$1500.8(a)(1).

As I pointed out in my comments of June 23, 1973, one other project exists in the Pearl River Basin exists ---maintenance dredging of the West Pearl River. The Mobile District offices prepared an environmental impact statment on that project and released it in May, 1973.

Portions of the Pearl River have locks on them and these locks are operated and maintaned by the Mobile District, Corps of Engineers. At no point are they mentioned in the revised statement.

Therefore, it appears that those dark lines above and below the comment in the revised statement that "there are no other Federal actions which, in connection with this project, would constitute a cumulatively significant impact on the environment" are what I suspected--cut and paste marks! Department of the Army Mobile, Alabama 36628

July 30, 1974 Page 3

- 4. The revised statement does not contain a rigourous and objective evaluation of the environmental impacts of all reasonable alternatives, particularly those that might enhance environmental qualities or avoid some or all of the adverse environmental effects. 40 CFR \$1500.8(a)(4).
- 5. The revised statement does not provide for alternative measures to provide for compensation of fish and wildlife losses, including the acquisition of land, waters, and interests therein.
 40 CFR \$1500.8(a)(4).
- 6. There is no cost-benefit analysis or summary thereof attached to the revised statement. 40 CFR \$1500.8(a)(8).
- 7. The revised statement does not indicate in the text all underlying studies and other information considered nor its source. It does not indicate the cost-benefit analysis prepared by consulting agencies under the Fish and Wildlife Coordination Act and the National Historic Preservation Act, nor the specific input of the consulting agencies. 40 CFR \$1500.8(b).

Merely stating that comments were obtained and considered is insufficient. The revised statement should have clearly indicated that there has not been any comprehensive archeological study of the Pearl River Basir, and therefore, the statement that there are no archaeological sites located adjacent to the proposed project is grossly misleading.

As a result of these insufficiencies in the revised statement I urge that you redo the entire thing.

Sincerely yours,

Doris Falkenheiner, Chairperson

Doin Dacken heiner

Michael L. Crego

B3 METAIRIE COURT, METAIRIE, LOUISIANA 70001

July 30, 1974

E. A. Drago Chief, Fnvironment & Resources Branch Mobile District, Corps of Engineers P.O. Box 2288 Mobile, Alabama 36628

Dear Mr. Drago:

The following are my comments on the Revised Draft Environmental Statement for the East Pearl River, Louisiana and Mississippi (Maintenance Dredging):

1. Mississippi Test Facility of NASA

The test facility, as you noted in the draft statement, is being phased-down. A discussion of the future plans for this facility should be included in the statement. The facility is the main reason for the proposed project.

You presented a discussion on waterborne commerce for the East Pear River in the draft statement. I believe you should also discuss the motor freight and rail freight industries of the area. Tonnage figures for motor and rail freight should be added to the statement. An increase in waterborne commerce could mean a decrease in rail and motor freight and therefore an economic lost to these carriers.

3. Benefit to Cost Ratio
Section 1500.8 of CEQ Guidlines for Preparation
of Environmental Impact Statements as appearing in
the August 1, 1973 Federal Registry, VOL. 38-147
provides that "... agencies that prepare cost-benefit
analyses for proposed actions should attach such
analyses, or summaries thereof, to the environmental
impact statement, and should clearly indicate the
extent to which environmental costs have not been
reflected in such analyses."

4. Wildlife

The dredging will open the East Pearl River to commercial and private vessels. This would result in more roads, expansion into marshes and woodlands. This expansion would result in the cestruction of habitats for reptiles, amphibians, mammals and birds.

Displaced animals can be expected to succumb to natural mortality or to displace other resident animals. Disturbances of female birds on the nests during egg-laying or in early incubation would in some situations result in either abandonment or predation of nests, depending upon the type and duration of disturbance and bird species.

In your discussion of fish and wildlife you failed to mention the species of mammals, reptiles and amphibians that inhabit the marsh and surrounding area of the East Pearl. I believe it would be helpful if you would list these species of wildlife.

You mentioned the fact that "the marshes surrounding the area are important for many species of
shorebirds and for geese and ducks." I believe it
would also be helpful to list these species. Special
mention should be made of the raptors found in the
area.

Some examples of mammals to be found in the area are opossum, raccoon, longtail weasel, mink, river otter, nutria, variety of mice and rats, rabbits and squirrels.

There are a variety of turtles, lizards, snakes, salamanders, toads and frogs that inhabit the area.

5. Chemical Analyses of Water You presented in the draft statement a chemical analyses of the water from the Gulf Intracoastal Waterway at Mile 40.1. This area is about two miles from the start of the project and, in addition, the analyses was taken over three years ago. Many chemical changes can occur in the water within three years. I believe a current analyses should be taken within the project area. It is difficult for anyone to formulate a correct conclusion with outdated information.

6. Alternating Water Currents or Hydrological Conditions If the project is approved care must be taken to avoid alternating water currents or hydrological conditions. This could harm the cyster production in Heron Bay.

7. Work Force
On page 17 of the draft statement you said, "Of the labor force that is within Hancock County, only 60 per cent is able to obtain work within the county,..."
What year was the figure of 60 per cent calculated?

8. Feople of Area
It should be noted in the draft statement that many people in St. Tammany Parish and Hancock County live in these areas to get away from city problems such as noise, crowds, pollution and crime. Many citizens commute daily to New Orleans to their jobs and look forward to returning to the quiet life of the country. Economic expansion could be a reason for people leaving the city. Are the people who commute complaining about it? Many citizens of New Orleans own homes in St. Tammany Parish and Hancock County and use these homes only on weekends or for the summer. Their main reason is to get away from the hetic life of the city.

I would like to thank you for latting me comment on this draft statement. I hope these comments will be of some help to you. I remain,

Sincerely yours,

Appendix D
1974 SEDIMENT SAMPLING DATA

Table of Contents

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Location of Sediment Sampling Station	D-1
Figures of Physical Analyses of Sediment Sample	D-1
Table of Chemical and Bacteriological Analyses of Sediment Samples	D-3
Table of Pesticides Analyses of Sediment Samples	D-4
Table of Elutriate Analyses of Sediment and Water Samples	D-5

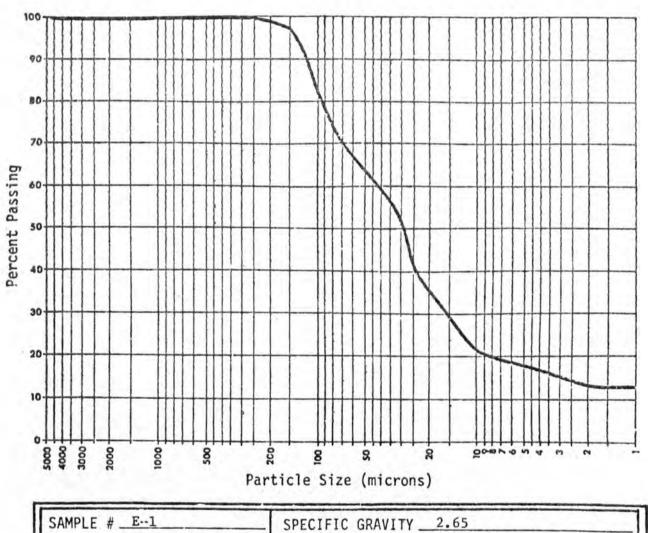
LOCATION OF THE SEDIMENT AND WATER SAMPLING STATION, EAST PEARL RIVER, MISSISSIPPI AND LOUISIANA

Station
Number Location
E-1* Buoy C-5

Note: *Indicates dilution water collected at site of sediment sample for elutriate test.

Figure D-1

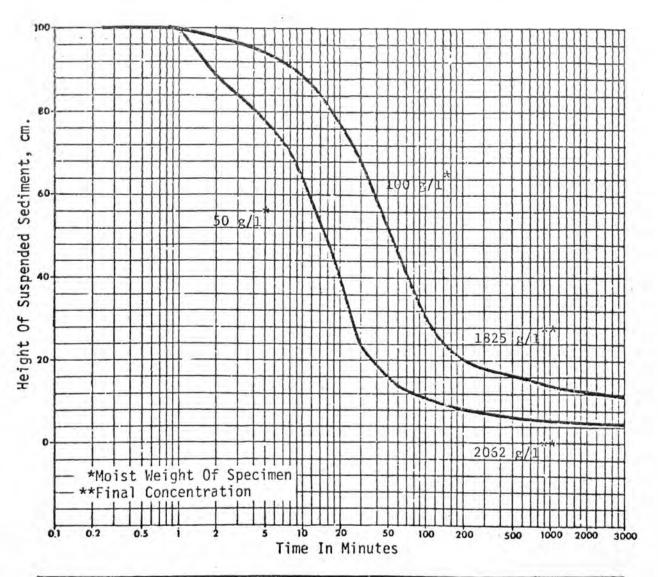
PHYSICAL ANALYSES OF THE SEDIMENT SAMPLE,
EAST PEARL RIVER, MISSISSIPPI AND LOUISIANA



SAMPLE # E1	_ SPECIFIC GRAVITY
DATE13 July 74	STANDARD CLASSIFICATION _ML
TIME	FIELD DESCRIPTION OF SEDIMENT Black ooze
WATER DEPTH (ft.) 8	

Figure D-2

PHYSICAL ANALYSES OF THE SEDIMENT SAMPLE,
EAST PEARL RIVER, MISSISSIPPI AND LOUISIANA



SEDIMENT SAMPLE # __E-1 ______
WATER SAMPLE # __E-1 _____

TABLE D-1 CHEMICAL AND BACTERIOLOGICAL ANALYSES OF THE SEDIMENT SAMPLE EAST PEARL RIVER MISSISSIPPI AND LOUISIANA

CCNST ITUENT	El	SUGGESTED EPA BULK ANALYSIS GUIDELINES
MOISTURE (chemical sample) (%)	5.5	N.A.
VOLATILE SOLIDS (%)	4.76	6
C.O.D. (mg/Kgx10 ³)	17.15	50
T.O.C. (mg/Kgx10 ³)	6.42	N,A.
TOTAL PHOSPHATE (mg/KgP)	45.75	N.A.
T.K.N. (mg/KgN)	789.6	1000
AMMONIA NITROGEN (mg/KgN)	16.8	N.A.
OIL & GREASE (mg/Kg)	592	1500
CONDUCTIVITY (umhos)	260	N.A.
MOISTURE (bacteriological sample) (%)	51.5	N.A.
TOTAL COLIFORMS (organisms/gram)	4928	N.A.
FECAL COLIFORM (organisms/gram)	41	N.A.
MOISTURE (Heavy metals sample) (%)	52.8	N.A.
MERCURY (mg/Kg)	0.11	1.0
ARSENIC (mg/Kg)	6.9	N.A.
COPPER (mg/Kg)	6.8	N.A.
ZINC (mg/Kg)	34.3	50
CADMIUM (mg/Kg)	0.56	N.A.
LEAD (mg/Kg)	9.6	50
NICKEL (mg/Kg)	14.9	N.A.
CHROMIUM (mg/Kg)	5.6	N.A.
IRON (mg/Kg)	0.3	N.A.

^{*} From "Water Quality Considerations for Construction and Dredging Operations". U.S. Environmental Protection Agency, Water Quality Office, Southeast Region, Federal Facilities Branch. 1971.

N.A. Not Applicable.

PESTICIDES ANALYSES OF THE SEDIMENT SAMPLE, EAST PEARL RIVER, MISSISSIPPI AND LOUISIANA

SAMPLE # E-1

MOISTURE % 34.83

PESTICIDE	CONCENTRATION PPB	MINIMUM DETECTABLE LEVEL	
Aldrin	N.D.	0.206	
Chlordane	N.D.	1.843	
Dieldrin	N.D.	0.282	
DDD (TDE)	N.D.	0.756	
DDE	N.D.	0.730.	
DDT	N.D.	0.956	
Endrin	N.D.	0.400	
Heptachlor	N.D.	0.103	
Heptachlor Epoxide	N.D.	0.173	
Lindane	N.D.	0.106	
Methoxychlor	N.D	2.455	
Mirex	N.D.	0.684	
Toxaphene	N.D.	14.731	
Diazinon	N.D.	0.305	
Guthion	N.D.	8.900	
Malathion	N.D.	4.296	
Methyl Parathion	N.D.	5.236	
Parathion	N.D.	5.217	
PCB (AR 1242)	N.D.	2.578	
PCB (AR 1254)	N.D.	4.846	
PCB (AR 1260)	N.D.	8.631	

Notes: Results are expressed on a dry weight basis.

N.D. = Non-detectable.

TABLE D-3

ELUTRIATE ANALYSES OF SEDIMENT AND WATER SAMPLES FOR CHEMICAL AND HEAVY METALS CONSTITUENTS, EAST PEARL RIVER MISSISSIPPI AND LOUISIANA

13 JULY 1974

PARAMETER	DILUTION WATER	STANDARD ELUTRIATE	EPA 1973 PROPOSED WATER QUALITY CRITERIA FOR MARINE WATERS
*T.O.C. (ppm)	16.1	19.3	N.A.
AMMONIA NITROGEN (ppm)	1.3	2.06	N.A.
T.K.N. (ppm)	7.04	6.22	N.A.
PHOSPHORUS (ppm)	0.039	0.002	N.A.
CONDUCTIVITY (umhos)	12700	14100	N.A.
SALINITY (ppt)	8.9	9.2	N.A.
pH (standard units)	8.03	8.11	6.5 - 8.5**
MERCURY (ppb)	0.3	2.4*	1.0
ARSENIC (ppb)	119.0	10.0	50
COPPER (ppb)	6.7	3.8	50
ZINC (ppb)	0.2	5.3	100
CADMIUM (ppb)	0.3	0.3	10
LEAD (ppb)	0.9	1.2	50
NICKEL (ppb)	5.6	4.3	100
CHROMIUM (ppb)	2.3	10.7	100
IRON (ppb)	10.0	10.0	300

Data Subject to Revision.

^{**} Within this range fluctuations of 0.2 units in either direction from normal are acceptable.

N.A. Not Applicable.